MAR 1929

HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association

Medical Library

April, 1929 25 Cents

Pneumonia *Birthmarks* *Mountain Mothers*

"We are advertised by our loving friends"

Mellin's Food—A Milk Modifier

? *Why does Mellin's Food hold such a prominent place in infant feeding* ?

Because it is used with fresh milk—a scientifically correct basis for bottle feeding.

Because it acts upon the casein of milk, making the curd flaky, soft and easily digested.

Because it favorably influences the digestibility of the cream of milk.

Because it adds carbohydrates in the highly assimilable form of maltose and dextrins.

Because it adds mineral matter in a form readily utilized for the development of bones and teeth.

Because by its use infants thrive and mothers find contentment as they record the satisfactory progress of their babies.

Mellin's Food Biscuits — Especially suitable when it becomes time to wean the baby from the bottle — **Mellin's Food Biscuits**

A sample box sent free, postage paid, upon request.

Mellin's Food Co., 177 State St., Boston, Mass.

HYGEIA, the Health Magazine, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $3.00; for foreign postage add 50 cents. Volume 7, Number 4. Entered as second-class matter March 21, 1929, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103, Act of October 3, 1917, authorized March 21, 1923.

HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association
Edited by Morris Fishbein, M.D.

VOLUME 7 — APRIL, 1929 — NUMBER 4

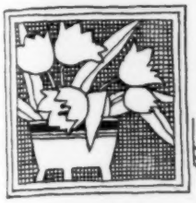
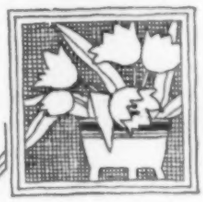


TABLE OF CONTENTS



COVER DESIGN
Charles Ropp — PAGE

FRONTISPIECE—HEALTH ALMANAC 345
THE DOCTOR AND HIS PATIENT 347
William J. Mayo
BIRTHMARKS 351
Joseph V. Klauder
MOUNTAIN MOTHERS OF KENTUCKY 353
Pauline Myers
PNEUMONIA 357
Jesse G. M. Bullowa
THE BABY THAT CRIES AT NIGHT 359
William J. Corcoran
WHEN DO I EAT? 361
HOW TO CONTROL DISEASES IN SCHOOL 362
Harold B. Wood
THE RUNABOUT CHILD AND HIS PROBLEMS—VIII. THE TEETH 367
BRAINS—A MATTER OF RELATIVITY 369
Donald A. Laird
YOUR CITY AND YOUR HEALTH—I. WHAT IT OWES THE CHILD 373
W. W. Bauer
EMIL VON BEHRING 376
TUBERCULOUS PHYSICIANS AND THEIR CONTRIBUTIONS—WALTER RATHBUN 377
J. A. Myers

PAGE

BUTTER 380
James A. Tobey
VARICOSE VEINS 383
Norman J. Kilbourne
WHY PLANT A GARDEN? 384
L. E. Warren
A HISTORY OF SEWAGE TREATMENT 385
James E. Foster
SIMPLE LESSONS IN HUMAN ANATOMY—LESSON IV. THE SPECIAL MUSCLES 389
B. C. H. Harvey
PLAIN FACTS ABOUT HEALTH AND DISEASE:
Animal Experimentation 392
Calm People, the Chinese! 393
Teachers and Physicians Cooperating 393
BARBY'S VISIT—A STORY FOR NINE-YEAR-OLDS 395
Harriott B. Churchill
WHY KITTY GROWS 397
Pansy Nichols
HEALTH AND THE SCHOOL 398
Edited by J. Mace Andress
NEW BOOKS ON HEALTH 402
NEWS AND VIEWS 403
QUESTIONS AND ANSWERS 407

Contributors to This Issue

DR. WILLIAM J. MAYO, author of the leading article for this month, has been an eminent figure in the medical profession for many years. DR. JOSEPH V. KLAUDER is a specialist in diseases of the skin.

PAULINE MYERS, as her "Mountain Mothers" explains, is a public health nurse in that section which has so long remained isolated from the advance of civilization. DR. JESSE G. M. BULLOWA describes the differentiation of types of pneumonia. Much of this research has been accomplished through the Littauer Pneumonia Research Fund of New York University.

DR. WILLIAM J. CORCORAN specializes in telling parents what to do for sick and crying babies. DR. HAROLD B. WOOD is by profession an epidemiologist, a physician who devotes his attention to the study of epidemics and epidemic diseases.

DR. NORMAN J. KILBOURNE will be remembered as the author of the concise article on dangers of self-medication published in HYGEIA in October, 1928. DONALD A. LAIRD and DR. FRANK HOWARD RICHARDSON frequently appear in the pages of HYGEIA.

DR. W. W. BAUER'S practical series on public health questions is written from his long experience as a health officer in a Wisconsin city. DR. J. A. MYERS, who is connected with a large medical school, has made extensive historical studies of tuberculosis.

JAMES A. TOBEY, a well known authority on nutrition who holds the degree of doctor of public health, has written frequently for HYGEIA. L. E. WARREN is connected with the insecticide division of the U. S. Department of Agriculture. JAMES E. FOSTER has written numerous articles on sanitation and sewage disposal. DR. B. C. H. HARVEY is a member of the faculty of the anatomy department of a large mid-western university. HARRIOTT B. CHURCHILL is connected with Oberlin College at Oberlin, Ohio. PANSY NICHOLS is a member of the staff of the Texas Public Health Association.

Published monthly by the American Medical Association, 535 North Dearborn Street, Chicago. Subscription price $3 a year. Single copies 25 cents. Foreign subscriptions $3.50 a year.

Copyright, 1929, by the American Medical Association. All rights reserved.

Harvey Lister Billings

Health Almanac

APRIL, 1929

1 ON THIS DAY IN THE YEAR 1578, William Harvey, who first established the fact that the blood circulates, was born in England.

2 SANG THE SUNRISE on an amber morn—
"Earth, be glad! An April day is born.
Winter's done, and April's in the skies,
Earth, look up with laughter in your eyes!"
—Charles G. D. Roberts.

3 MONEY, like manure, does no good till it is spread. There is no real use of riches, except in the distribution; the rest is all conceit.—Dr. Enfield, 1837.

4 EVERY MAN is a moving miracle; but there are some that may justly move the wonder of all the rest.—N. Wanley.

5 SIR JOSEPH LISTER, recognized as the man who established the antiseptic treatment of wounds, was born, April 5, 1827.

6 A SANE MIND consists in a good digestion of experience.—Clifford Allbutt.

7 LAZINESS SLACKENS and dulls the body, but labor strengthens and makes it firm. The former hastens old age; the other prolongs youth.—Celsus.

8 FAT PEOPLE ought to eat and sleep little, and use much exercise, in which the cure chiefly consists.
—Dr. John Arbuthnot, 1735.

9 FRANCOIS RABELAIS, French physician, far more noted as a writer and philosopher, was born, April 9, 1495.

10 ON APRIL 10, 1917, v. Economo reported the first case of lethargic encephalitis (commonly called sleeping sickness) in Vienna.

11 THE MOST one can get out of a chiropractor is back talk.

12 JOHN SHAW BILLINGS, creator of the army medical library and of its index-catalogue, was born, April 12, 1839. On April 12, 1853, Sir James Mackenzie, noted British physician, authority on heart disease, was born in Scone, Scotland.

13 DEAN INGE says that in a million years man may become a really noble creature—that's something to strive for.

14 AN EDUCATED MAN knows when a thing is proved and when it is not. An uneducated man does not know.—Lord Morley.

15 PAIN AND DISEASE ARE UNPLEASANT, therefore they are as unreal as the apparent union of parallel lines, and whatever our sensations, we may confidently deny the truth of our experiences. In other words, we ought to accept Christian Science because a conjuror draws tame rabbits out of a silk hat.—C. O. Hawthorne, M.D.

16 I AM OF THE OPINION that our first duty is to enquire whether a thing be or be not, before asking wherefore it is.—William Harvey.

17 ASAFETIDA has been put on the tariff free list. This will have the approval of the voodoo healers who prevent disease by hanging asafetida in a bag around the neck.

18 A MECHANICAL DEVICE has been invented which will call mother when baby cries at night. Then mother can send father as she usually does.

19 LIVING TO OLD AGE goes in families; and so does dying before old age.—Paget.

20 ABNORMAL PEOPLE, spiritual freaks, are what psychology loves. It does not appear that she does much for them, but she demonstrates them, plays tunes on them.—Stephen Paget, F.R.C.S.

21 FRIEDRICH FROEBEL, German educator, founder of the kindergarten system, was born, April 21, 1782.

22 ON APRIL 22, 1899, the Liverpool School of Tropical Medicine, from which have come many important discoveries, was opened in England.

23 BATHING ALONE will not make good health but still it has its advantages.

24 A STORK WAS RECENTLY FROZEN in a blizzard in Poland, and it doesn't always get such a warm reception in this country.

25 A PEDESTRIAN IS KILLED by a motor car every eight hours. A cat with nine lives could stand it longer.

26 TO BE A GOOD NURSE one must be an improving woman; for stagnant waters, sooner or later, and stagnant air, as we know ourselves, always grow corrupt and unfit for use.
—Florence Nightingale.

27 A GENIUS is a man who can tell a medical story to the Tuesday Afternoon Ladies' Club and get away with it.

28 WASTE OF ENERGY, mental distress, nervous worries dog the steps of a man who is anxious about the future.—Sir William Osler.

29 IN 1870, a lady who was shocked would faint; in 1929, she says, "Well, I'll be ————!"

30 IN THE SPRING a young man's fancy
Lightly turns to thoughts of love;
And his endocrines, feeling prancy,
Give his thoughts of love a shove.
M. F.

The Doctor and His Patient

By
William J. Mayo

The physician of the old school with his top hat and double-breasted frock coat has practically disappeared. In his place is a new type of doctor in the sack suit of the business man.

THE physician of the old school, with his top hat and double-breasted frock coat, who practiced as an individual in all branches of medicine and surgery, has practically disappeared. He has given place to a new type of physician, who, discarding the stage scenery of the old school, dresses in the sack suit of the business man and works, not as an individual, but as a part of an organization in which the state, one way or another, has become his partner and aids him in his work.

This change in the outward appearance of the physician is one of the visible results of the public's recognition of his sound scientific training and the part that modern medicine plays in the health of the people, as shown by the present-day methods of dealing with the great pandemics such as cholera and the plague. Even more impressive are the triumphs of the physician over the more common diseases, such as typhoid, a disease that man had come to look on as a visitation of Providence and that has killed more people than the unfamiliar and therefore terrifying diseases of ancient times.

Civilization Depends Largely on Health

Civilization and intellectual growth depend largely on preventive medicine. If each person were left to develop his own resistance and immunity, we might expect eventually to reach the condition of China, in which all effort intuitively is expended to protect the body against disease. The Chinaman, with his ancient civilization, slowly developed individual resistance to bad hygienic conditions. His resistance to the common diseases, his acquired immunity to many, and his ability to extract nourishment from ill-suited foods have made him a formidable competitor of the American laboring man and have caused his exclusion from our country.

The American Indian by moving constantly from place to place escaped the consequences of his filthy ways. Many of his descendants, living the life of the white man, died from filth diseases. The length of life of the Indian was in direct proportion to his hygiene after he adopted a fixed abode.

The First Function of the State

We pride ourselves on our advancing civilization and intellectual superiority. If we are to continue to advance, the public health service must be made the first function of the state. It is probable that neither prohibition propaganda nor an appeal to the conscience of man has caused the rapid advance of the temperance movement, but that pure water has made this possible.

It is assumed that the drinking of spirituous and fermented liquors is due to an evil inborn longing to be stamped out only by the exercise of individual self-control. Is this actually a fact?

In France and Italy the drinking of billions of gallons of wine saved the people from extinction; they could not have lived had they drunk their polluted water. The Teutonic countries turned to beer to secure a sterile drink; England had ale and wine, and temperance countries, such as Turkey, had tea and coffee. Simultaneously with Vienna's introduction of a pure water supply from the mountains, her per capita consumption of spirituous and fermented liquor was reduced 40 per cent. The introduction of

a pure water supply in the various states in our own country has been followed by a temperance movement, and finally by prohibition. The drink habit is one of the many forms of individual protection resorted to by nature to save man from filth diseases which cause death or that which is worse than death, intellectual deterioration. As pure water is introduced into the countries of Europe a temperance movement is at once manifest.

Medicine in the great war was triumphant. For the first time in the history of wars, the number of deaths from casualties was greater than the number of deaths from disease. Eighty-five and five-tenths per cent (Billings) of the injured soldiers were able to return to the fighting line, and 5 per cent more were made fit for special or limited military duty in areas in the rear; in the Civil War nearly half the soldiers were out of the war permanently after injury, and a high percentage were at all times too ill from disease to render efficient service in battle. In the Spanish-American War one man died of gunshot wounds to thirty who died of disease (Smart). Typhoid, the great enemy of both army and civil life, has been eliminated by a pure water supply. If this cannot be obtained normally the water is rendered safe by treatment with hyperchlorates, and the soldiers are protected against accidental infection by antityphoid vaccination.

In France and Italy the drinking of billions of gallons of wine saved the people from extinction. They could not have lived had they drunk their polluted water.

The public has been almost unaware of the growth of preventive medicine and public hygiene, and but little has been accomplished along these lines in comparison with all that may be done. Smallpox can be wiped from the United States, as was done in prewar Germany. The continuation of the disease in any country is a disgrace; it is due to the ignorance and prejudice of some and to the indifference and selfishness of others. The examination of school children and the giving of instruction with regard to teeth, tonsils and general physical care is of primary importance in guarding against infections. Infections are responsible for metabolic changes that later result in disease of the nervous system, of the heart and of the kidneys in middle age. Yet, even with the ineffectual measures that have been instituted, marvelous good has been accomplished.

Of all cooperative enterprises public health is the most important and gives the greatest returns. To obtain necessary legislation we must depend on the education of the public, and this, I am glad to say, is rapidly progressing. That there is much opposition to legislation for public health measures and that such opposition is always from the same group of obstructionists whose prejudices are believed by them to be principles and to whom controverting facts have no meaning, is well known. But such opposition is not entirely harmful. The agitators at least attract an audience before whom the truth may be placed. People as a whole are more interested in their individual affairs than in movements to enforce public health measures, and unless sickness actually exists in their own families or unless they are in the midst of a strange epidemic they pay little attention to such matters.

Public Does Not Want Health Propaganda

Individually, no man is respected more highly than the physician. Collectively, doctors are often looked on as a nuisance because, in season and out of season, they try to advance public

health measures to reduce sickness and, obviously, to reduce the number of their patients. Such unusual acts of philanthropy are likely to be viewed with suspicion by the general public and particularly by legislators, who fail to understand why a man should destroy his means of earning a livelihood. Moreover, the public does not wish to be disturbed or to be forced in the midst of health to dwell on the unpleasantness of sickness. The public may always be generously enlisted to remedy existing evil; to prevent some future evil is less appealing.

The surgeon is brought constantly in contact with persons suffering from diseases for which the knife is the best remedy. He is rewarded by the gratitude of his patients, and yet very often he furnishes a remedy for diseases that are preventable. On the other hand, the public health officer and the sanitarian, who save thousands of lives by preventive measures, are looked on as disturbers of the public peace. The practice of preventive medicine calls for a man of the highest order, one who is endowed with the spirit of the crusader and who is satisfied to do his duty without thought of reward.

In the past generation the whole trend of thought has been individualistic. Remedies are sought for deplorable conditions with little investigation of the underlying causes, and too often monetary considerations lead to action. An enormous number of undigested laws are passed at each session of a legislature and each law is supposed to be a dose of medicine for a particular evil. Some of the laws are necessary, others unnecessary or harmful. Many of these are for the purpose of quieting popular clamor and not for enforcement. It is just such legislative follies and failures that lead to the prevalent disrespect for law and make it difficult for medical men to secure legislation for public health service.

The public is badly advised, voiceless and often powerless against the opposition of interests that would be adversely affected by the measures advocated. At times it actually appears that those who profit by the physical and social diseases of man believe they have a vested right in the continuation of the evil conditions that produce them. Now that potable water has been largely secured, polluted milk and unsound foods that are sources of disease are undergoing legislative attention that will give increased strength to the pure food laws. This era of law making, a little remedy for each little ill, however, is showing signs of evolution, a groping in the dark from the individualistic to the general in public health measures. The individual is an integral part of society and is endangered by the contagious diseases of any other individual; if he would be well himself he must see that his community as a whole keeps well.

The medical profession is grouping itself along scientific lines, not for the profit of the doctor, but in order that he may more adequately and satisfactorily perform his work. This will give patients the benefit of modern medical knowledge. It is not to be inferred that there will be no individual practice or that all medicine will be practiced in groups. On the contrary, the state health departments are furnishing, through their laboratories, the diagnostic aid that gives the average practitioner expert reports on pathologic and bacteriologic specimens and enables him to apply in the care of his patients the data that he personally has neither the time nor the training to develop.

It is a curious fact that among the opponents of animal experimentation are some ardent hunters and fishermen.

State Should Extend Health Services

The state furnishes diphtheria antitoxins and vaccines for smallpox, typhoid and other diseases. This important work of the state should be extended. Certainly 50 per cent of all sickness is preventable, and it is the duty of the state to guard the health of its citizens through the prevention of disease. The people should be made to understand that the state is culpable if its citizens are allowed to become ill through manifest neglect. It is probable that such an understanding by the people would result in greater good through new legislation than all the work of the medical profession.

In the past, industry was so prodigal of its human machinery that no precaution was taken for the protection of the life and limbs of employees. Immigration furnished an enormous supply of raw material and vacancies were filled. Today this supply is no longer so freely available and industry is caring for its workmen most assiduously. It is recognized as never before that men who are trained for a certain work are an asset and that with care their lives may be prolonged. In the past it was difficult for a man more than 40 years old to get a job; if he was more than 50 it was practically impossible. The older men are now regarded as the most valuable; they are trained for the work, their habits are steady and their views less inflammable, thus discouraging industrial disturbances. Electrical power controlled by brains takes the place of the muscle power of ignorance. As a result of new conditions some industries have developed fine economic organizations that serve as examples of what may be done. Given legislation and proper control, the average life of man may be lengthened at least ten years, and his industrial efficiency will be prolonged in proportion.

Animal Experimentation

As the trend in modern industry is toward the development of new combinations from the breaking down of the old, so in medicine similar fundamental changes are taking place. Industry has the advantage that in its experimental work it deals with replaceable materials; medicine must depend to a considerable extent on animal experimentation, which has played a magnificent part in the advance that has been made. To have value, animal experimentation must of necessity be carried out with the same humane care as surgical and medical procedures on the human patient; otherwise the experiments would be inexact and therefore worthless.

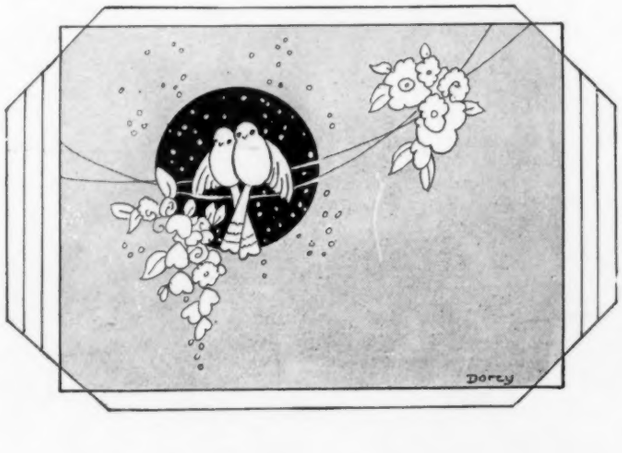
It is a pity that so many well meaning people have allowed themselves to be swayed by fallacious statements into giving aid to an active band of so-called antivivisectionists. Without real knowledge these misguided people throw every possible obstacle in the way of scientific advance in the prevention and cure of disease and their very honesty makes them difficult to cope with. Even more unfortunate for future progress in medicine are the moneys left to establish foundations in perpetuity for such short-sighted purposes; ultimately these foundations support human parasites who, not by reason of their present opinion on the subject, but because of their job, interfere with humanitarian movements at practically every session of every state legislature.

It is a curious fact that among the opponents of animal experimentation are some ardent hunters and fishermen. It is a still more curious point of view that permits antivivisectionists to shoot game and to leave to a lingering death from wounds and starvation the injured birds and animals that they fail to bag and to look with delight on their catch of fish slowly dying in a basket or on a string.

Must Cut Down Waste of Human Lives

If America is to succeed in maintaining her position in international commerce and to continue to pay the laboring man wages proportionate with the American scale of living, it must be done by rendering the American laboring man more efficient and longer lived, that he may produce more. In this way only can we compete with the nations of the old world, where the laboring man lives on a lower wage scale, is short lived, and consequently less efficient and less an asset industrially.

America has been wasteful of her timber and other great natural resources, but the greatest waste of all has been that of health and human life. If we are to continue as leaders of the world's civilization, we must have legislation that will provide money and power to prevent and control disease, money to place force behind the pure food laws, and laws that will remove public health service from the influence of local politics.



Birthmarks

By Joseph V. Klauder

The freckles came on later but the mole was present at birth.

H. Armstrong Roberts

THE broad concept of the term birthmark embraces any congenital abnormality of one or more of the structural elements of the skin that is present at birth or that appears subsequently.

Birthmarks are composed of an overabundance of one or more of the structural elements of the skin. For example, the so-called strawberry mark and port wine mark, which appear as reddish or purplish patches, are composed of a large number of blood vessels. The mole, another type of birthmark, represents a collection of a variable amount of pigment, which determines its color, and has a distinctive type of cell peculiar to many birthmarks.

Most Infants Have Vascular Marks

A birthmark may consist solely of a tuft or patch of hair in an area in which hair does not normally grow. Other birthmarks may be composed of a combination of the structural elements of the skin.

Birthmarks are extremely common. A considerable percentage of all persons have on their skin one type or another of such lesions. Indeed, the majority of infants at birth have in some degree a vascular type of birthmark, the so-called strawberry mark or port wine mark.

These marks occur in both sexes, presenting themselves in a great variety of formations on any part of the skin; they may also involve the mouth, lips, genitalia and, indeed, the nails and hair. In size they vary from that of a mole the size of a pinhead to an involvement of a considerable part of the body. Some types are so extensive as to merit the use of the term "bathing trunk." Others have a linear formation, appearing as a streak the length of the trunk or of an extremity. They exhibit great variations in color, shape, number and surface appearance. They may exist in the form of grotesque masses, and if these exist on the exposed parts of the body, they become of profound psychologic importance to the individual.

The Cause of Birthmarks

Birthmarks arise through a developmental error, the mechanism of which is complex and not clearly known. Considerations as to their origin intimately concern the mystery of tumor formation. Birthmarks invariably involve the

skin. In this regard it should be borne in mind that the skin is an organ of great complexity and is the largest organ of the body. This complexity is suggested in the estimation of the total number of sweat glands to be between two million and three million and the total length of these glands to be eight miles. A developmental error therefore in an organ of such great complexity is perhaps after all not surprising. One can rightly marvel at the fact, which surely is the most wonderful thing in a very wonderful world, that the majority of children born are normally developed and that gross abnormalities, as they are called, are not the rule.

It is a common belief among some persons that a certain mental attitude or experience of the mother, prior to the birth of her child, is a determining cause of the so-called strawberry mark or port wine mark. This is an erroneous belief and has no scientific foundation. Parents are in no way responsible for the presence of birthmarks on their progeny.

As a Precursor of Cancer

The type of birthmark that is sometimes a menace is the pigmented type, since cancer may develop. It notably includes certain kinds of moles. Reference is made to the coal black or slate colored mole. This may exist as a raised lesion with a smooth surface or with a rough wartlike surface, and may also exist as a mere black spot (a so-called beauty spot) or as a black patch. The danger of cancer developing in this type of birthmark is in proportion to the amount of pigment it contains; that is, how black it is. The greater the amount of pigment, the more likely it is that the mole will become cancerous.

Location is also a factor in determining their hazard. Some moles are so located as to be subject to irritation or injury from opposing surfaces of the skin or to irritation brought about by eye glasses, a razor, clothes or shoes. Others are subjected to picking or handling. A black mole, spot or patch on the sole of the foot is constantly subjected to irritation, and a mole on a man's face is irritated by shaving. Prolonged irritation may be a determining cause of a cancerous change.

Not all black moles eventuate into cancer, but such lesions may exist for years, unchanged, and then cancer may develop. In these instances irritation or injury plays a conspicuous rôle in the production of cancer.

It is therefore prudent to destroy or remove this type of mole, more particularly if it is subjected to constant irritation. Proper treatment consists in thorough and complete destruction at one time by appropriate means. It is wrong constantly to pick these lesions, to apply acids in attempting to remove them, to have them partly removed or partly destroyed, or to have them treated piecemeal or at intervals, since these procedures constitute irritation.

If a black mole, spot or patch should enlarge or ulcerate, should suddenly become blacker or bleed, or should develop little hard nodes or lumps, it is imperative to have it properly treated without delay, as these symptoms are danger signals of beginning cancer.

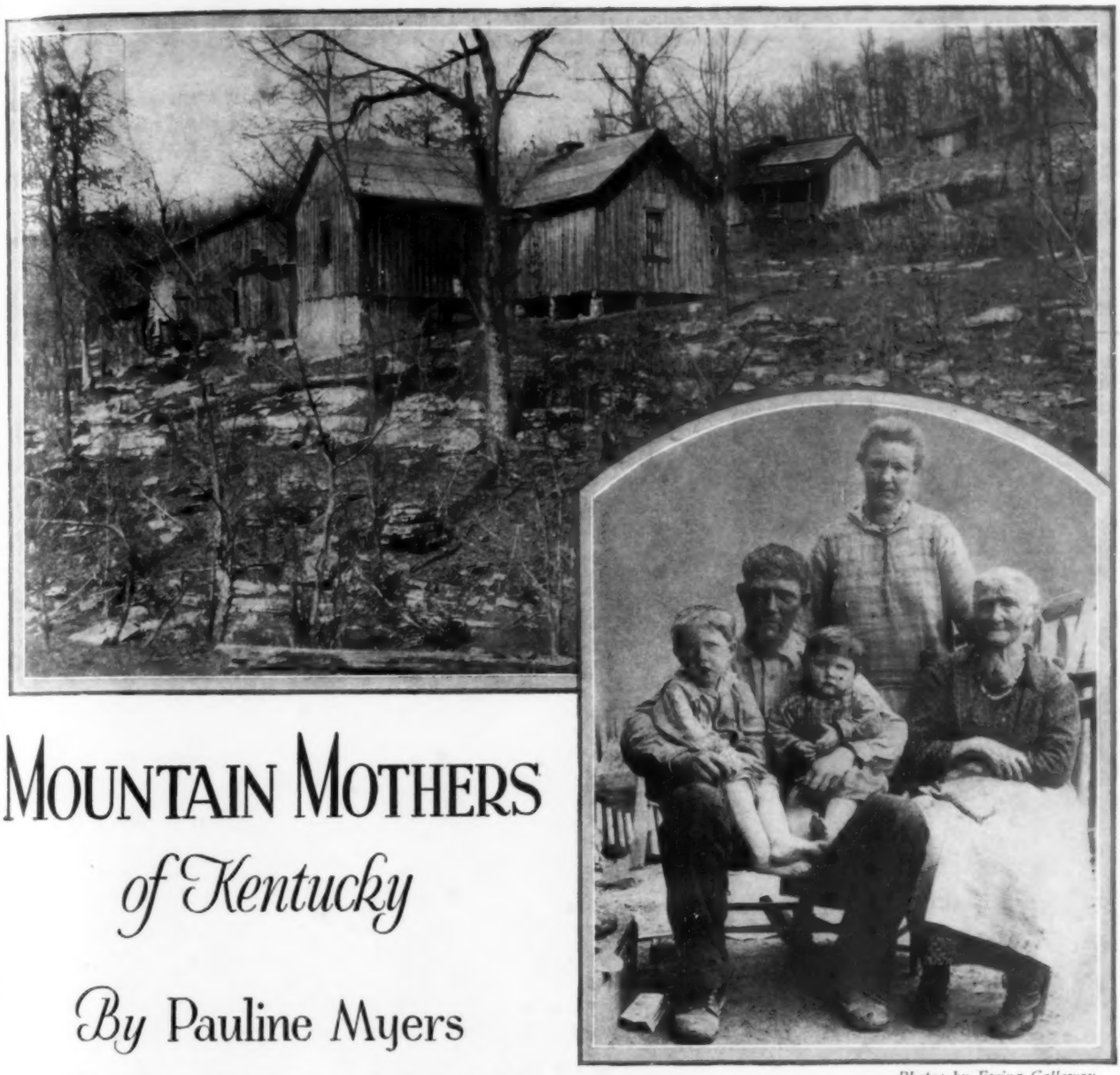
Not all moles are of the black variety. Many of them are yellowish brown or brownish. Another type is the so-called white mole. The danger of cancer developing in these is considerably less than in the black mole. Nevertheless it is best to have them removed if they are subjected to constant irritation or injury.

The possibility of cancer developing in birthmarks other than those of the pigmented type is remote, so that their removal for this reason alone is not greatly indicated. The removal of such lesions is essentially for cosmetic reasons. There are exceptions to this statement: for example, in certain vascular types of birthmarks, hemorrhage may occur following injury; hence it is desirable to destroy them. In such cases the aim of treatment is to obtain the best cosmetic results.

All Respond to Treatment

All birthmarks are amenable to treatment, which consists in destroying them by various means. Different kinds of birthmarks require different kinds of treatment. Such treatment in many but not all instances substitutes a scar for the birthmark. With modern methods, however, the scar is of such nature that it approximates the normal skin and is frequently far preferable in appearance to the birthmark.

In the case of the pigmented birthmark, on the other hand, in which cancerous change is potential, cosmetic results in treatment become subservient to the vital need of completely destroying the lesion, since it may be a precursor of cancer.



MOUNTAIN MOTHERS *of Kentucky*

By Pauline Myers

Photos by Ewing Galloway

A Kentucky mountain family and some homes among the hills.

NO ONE in the world works harder than the mountain woman. She has the household cares, the chores of garden and barnyard, and often she works shoulder to shoulder with her man in the fields —when her man works. Many times she works there alone. Her body knows little but hard manual labor and the yearly routine of child-bearing. Spiritually, she is a strange mixture of fanaticism and stolid fatality. Her mental horizons are bounded by her home, her family and her neighbors. Often she is illiterate, although she sometimes has a third or fourth grade education. She can usually read a little and write a little, but she has no intellectual curiosity. In the world outside the four walls of her home she has few contacts and less interest. She is suspicious of new people and new ideas but is possessed of the elementary virtues of hospitality, friendliness and an unswerving loyalty to those who have won her trust. It is, I believe, upon this trait of her character that health workers among the mountaineers must concentrate. She may not always understand just why the public health nurse may wish her to do certain things, but if the nurse wins her friendship and proves herself worthy of retaining it, the mountain mother will accept the things told her with the unfaltering trust of a child.

In the mining camps and the small towns, the nurse meets the wives and daughters of mining officials, the women who have married business and professional men, and the daughters of the more prosperous mountaineers who have been sent away to school. They live much the same lives as are lived in less isolated communities. The work of the public health nurse touches their lives very little.

I shall never forget an experience I had when I was very, very new in public health work. I had gone home from school with a little girl who needed glasses badly. I hoped to talk to her parents and see that she got them. I found that she lived in a two room slab house with eleven brothers and sisters, her father and mother and an uncle. There were three beds in one room, and the floor space not covered by these was littered with children who stair-stepped up from the least 'un, who lay on a dirty quilt before the fire, to Jim, who was 16 and "helped pappy with the crap." All were equally dirty and hookwormy.

I was filled with an ardent desire to clean up that family, to establish it in realms of sanitation and hygiene, to lift it by its own boot straps into a spic and span Arcadia where, I am sure, it would have been extremely uncomfortable and completely lost. Then and there, I delivered a monologue on child care and home hygiene which covered all the cardinal points of both subjects.

Ewing Galloway

A visit to the store. When the stream is dry or nearly so, it serves as a road.

Finally, the mother interrupted me.

"Are you married?" she asked.

"Why, no," I answered.

"Got any children?" she questioned grimly.

I bridled a little, I suspect, as I answered, "Certainly not."

"Well," said she, "I am, and I got twelve, all borned and raised in this house, and I ain't lost nary a child yet."

I left—with a number of valuable points still unmentioned. I was furious, but the more I thought the more inclined I was to see her side of it. The things I had told her were true, I knew, but she had only the word of a stranger, a "furrin" woman, and an old maid at that; and she knew that by her own ways she had achieved the only ambition she knew. She had borne and raised and kept alive her children.

The Truest Democracy

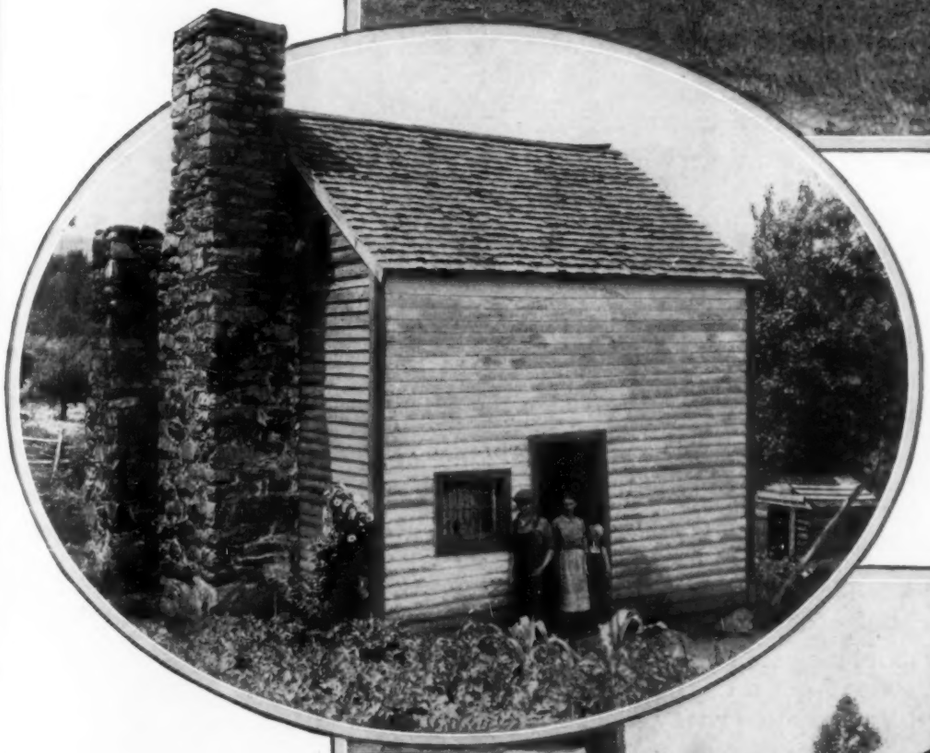
We must remember that the truest democracy in the world exists in the mountains. Here no man is superior to his neighbor merely by accident of birth or education or wealth. If he wishes leadership, he must first prove his right to lead. This is particularly true of the outsider, for the mountaineers feel that they have been grossly misjudged and misunderstood by strangers. The public health nurse taking her first mountain position must know and allow for this. She will find there no ready made position such as awaits her in other parts of the country, no respect due to her knowledge (vouched for by her title of R.N.), and no understanding of the years of training and hard work that have been spent in acquiring it. She will find more likely that her well-meant instructions are received with half-hidden amusement. She is an advocate of new ways, when every one knows that the old ways are good enough. She is a "furriner" whose ideas, though baffling, are doubtless well meant. She is usually, heaven help her, a spinster and subject therefore to the half pitying scorn of every mountain mother who gathers her brood of children about her in her two or three room cabin and knows that her lot in life is of all the most desirable.

Ann Cobb, in her admirable little book "Kinfolks," has expressed perfectly the mountain woman's philosophy of life. One poem is worth quoting in this connection.

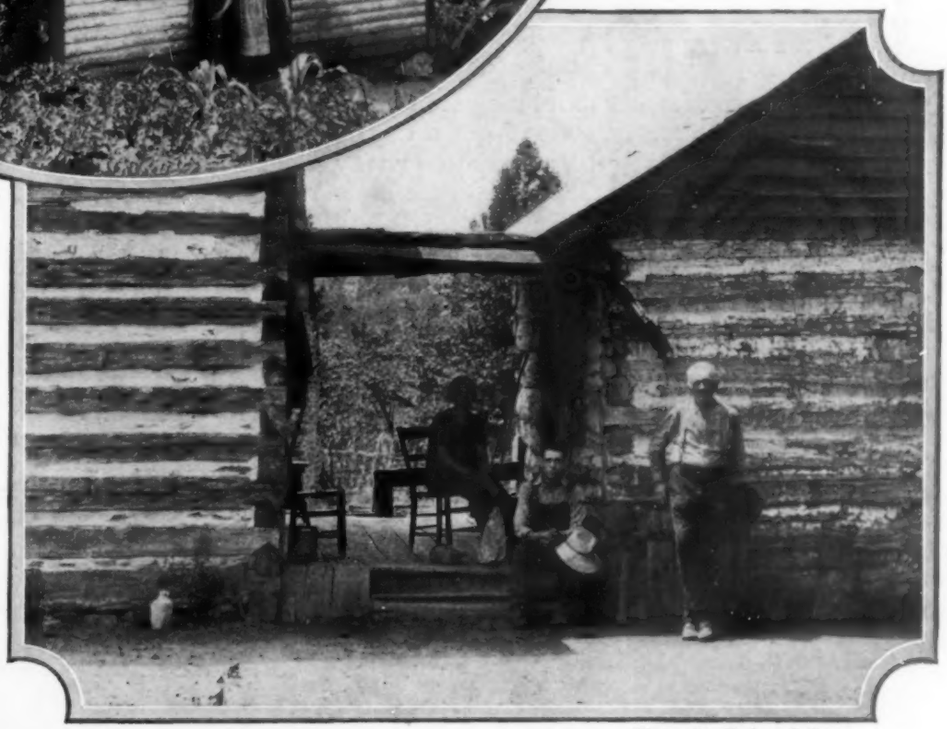
> There's just one work for a woman-soul—
> To win her man and bear him stalwart babes.
> I've done hit, too—seven, and all alive.
> You'll notice most robustious talk's put forth
> By them that never found their proper man.
> Them fotched on women, now, that runs the school
> And speechifies on voting, and don't own
> A man amongst 'em all—the way I see
> Things is, a woman that hain't got the sense
> To land a man, hain't got the sense to vote.

It was quite a long time before I got all these things straightened out in my mind but finally, having made an especial effort to understand my people and to understand my own position

The Kentucky mountain woman works shoulder to shoulder with her man in the fields—when her man works. Many times she works there alone.



At the left is the house of a more prosperous and up-to-date family. But note the small amount of window space.



A mountaineer's cottage of popular design, with a small porch between the two rooms.

Photos by Ewing Galloway

with them, I saw, as we say in the hills, "exactly where I was at," and decided that if ever I was to accomplish anything at all in my work it would not be by mere talking but by a much harder road, that of gradually selling myself and my job to the people who needed me. It is hard work, and uphill work, but as every health worker knows a most worth while task and one that yearly brings greater results.

Having got off on the wrong foot with the mother of the twelve, I decided that I would make a special effort to win her. Later, much later, after I had with extreme care and infinite patience erased her first impression of me, this woman paid me the highest compliment in her power. She said, "I like that little nurse. She don't act like she knows anything moren anybody else." Because she liked me she trusted me, and because she trusted me, Mary got her glasses, Charlie's tonsils were removed and the whole family was treated for hookworm.

How Sadie's House Was Screened

Occasionally one's results come in a mysterious manner, as witness the screening of Sadie Butterwin's house. Sadie was a typical mountain girl; she had married young, was poor as Job's turkey and was content with her lot. One thing and another had brought me often into her home until I came at last more as a personal friend than a nurse. What prenatal instruction and advice I gave was exchanged in the give and take of conversation. That I accomplished much I cannot candidly believe. She came, as she said, of a "gineration that had their young 'uns easy," and she looked forward to her third baby in four years with the calmness of a contented cow.

Toward the latter part of her pregnancy, however, things began to go wrong. She sent for me and I finally persuaded her to let me get her into the hospital. She lived 18 miles from a doctor and had planned as usual to have a granny woman. She did wonderfully well in the hospital and when I called on her there I found her enjoying the rest and attention she received, although I think that just at first she was certain that her baby was going to starve to death on the regular hourly feeding schedule. But the baby prospered and grew fat, and when Sadie went home she confided to me that she intended to go on with the regular feedings because "this was the first young 'un she had had that hadn't punished mightily with the three months' colic." Later, when I dropped in at her home, I found that the baby slept in solitary grandeur —and a soap box; she was nursed by the clock and was, as her proud father announced, "jes a model."

I had only one suggestion to make.

"Sadie," I said, "for the baby's sake you really should have your house screened this summer."

"I've been thinking of that," she answered. "I shorely do intend to get them screen doors soon as comes hot weather. It's just the only way to keep them chickens out of the house."

I have spoken of the fatalistic attitude of the mountain mother. Her religion seems a strange mixture of evangelical fanaticism, which she keeps for meetin's, and a stoic fatalism, which is her daily life. All that happens is by God's will. This faith helps her to bury her babes, to endure the masculine idiosyncrasies of her husband and to oppose with an almost animal-like ferocity any attempt to undo God's will, as manifested in the clubfoot and the cleft palate.

Here, as always, generalities are misleading. Some mothers are eager to take advantage of the opportunity to have their crippled children's defects corrected, but usually the securing of the parent's consent to hospitalization is one of the most difficult problems facing the county nurse. Here she must fight for the child with the mother's own weapons of religion and mother love. How often she must counter that dogged, "Hit's God's will. He war born like that" with another picture of God's will, of God's Son who loved little children and who went about healing the sick, the blind and the lame, and with another picture of mother love—of a love that is strong enough and fine enough to be lonely and worried and miserable because she knows it is best for her child.

Hard to Change Daily Habits

Any program that calls for continued cooperation on the part of the mother is apt to result in disappointment. If it is a matter of decision whether May shall be vaccinated for smallpox or whether Jim shall go to Richmond to have his eyes cared for, the nurse can eventually, with patience, secure an affirmative answer. But if there is an underweight, high strung child whose more delicate constitution rebels against the robust fare of the mountain table (fried salt pork, fried potatoes, fried eggs, fried corn pone) and who needs a completely revised diet, cod liver oil and special rest hours—whose care in fact requires some drastic readjustment in the routine of the household—the nurse still, as a rule, gets the same affirmative answer, and the child gets a bottle of patent medicine or some "yarbs" prepared by the local granny woman and continues to eat what he has always eaten and to grow punier and punier.

Besides understanding, the health worker in her contact with mountain mothers must have patience. She must be content to take up one thing at a time and to harp on it until it has been accepted. Then she can go on to something else and go through the same performance again. Changing the habits of a race is a slow business, compared to which the building of the pyramids was child's play.

PNEUMONIA

By Jesse G.M. Bullowa

PNEUMONIA was reported as the cause of 10,000 deaths in New York City during 1928; only one other cause exceeded this —heart disease. Pneumonia usually attacks those in their prime who must work and expose themselves for others. It often leaves widows and orphans when the patients die.

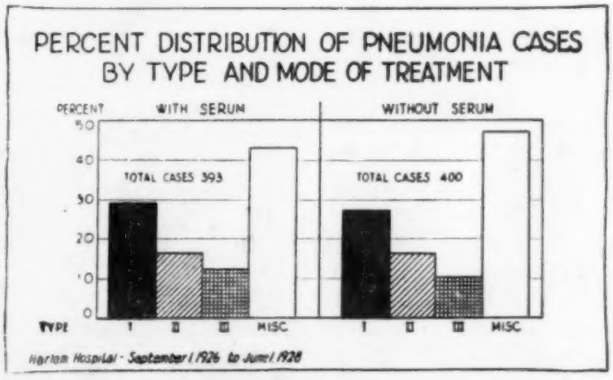
Whenever the lungs become inflamed as the result of an irritation, the patient has pneumonia. The usual irritant is the growth of a micro-organism, and depending on the kind of micro-organism, the physician characterizes the pneumonia. This method of differentiating the types of pneumonia in accordance with the cause is an important advance, as it helps in treating the condition. Other descriptions of the various kinds of pneumonia may be helpful but they are not as important as this one. The King of England has apparently had a pneumonia due to the chain organism called the streptococcus. This organism frequently attacks the aged and is the cause of much of the pneumonia in childhood, especially following measles.

The organism responsible for most of the pneumonias of adult life is the pneumococcus, a lance shaped organism found in pairs and surrounded by a gummy capsule. This gummy substance, in the presence of other poisons in the pneumococcus, acts as a poison and can be neutralized under certain circumstances. The gummy capsule differs chemically in the different types of pneumococci.

Microscopically, it is impossible to tell the pneumococci apart, but there are laboratory tests that separate them. The various types of pneumococci have been given numbers; at present, as the result of work by Dr. William H. Park and Miss Georgia Cooper, they are numbered from 1 to 13, and the miscellaneous or unclassified group (formerly known as group IV). Though the germs are all pneumococci, they are distinguishable with the appropriate tests. No one would confuse a russet apple with a crab apple; type I and type II pneumococci are quite as distinct. There are difficulties in making the determination and it may take as long as thirty-six hours to be certain of the type. This subdivision of types was accomplished in the research laboratory of the New York City Department of Health with funds furnished by the Littauer Pneumonia Research Fund of New York University.

Pneumonia is communicable, and persons suffering from any type of the disease should be isolated and care should be taken to prevent the passage of the disease from one person to another. Usually, the discharges are carried on the hands to the mouth or are coughed or sneezed onto the person or his clothing and then carried by his hand to his mouth.

Pneumonia is frequently preceded by colds or commences as a cold. All who are exposed to pneumonia do not acquire the disease. Those whose resistance is lowered by fatigue, chilling, accident or excesses of food or drink are more susceptible. During the season, wet feet, chilling by drafts or exposure should be avoided.

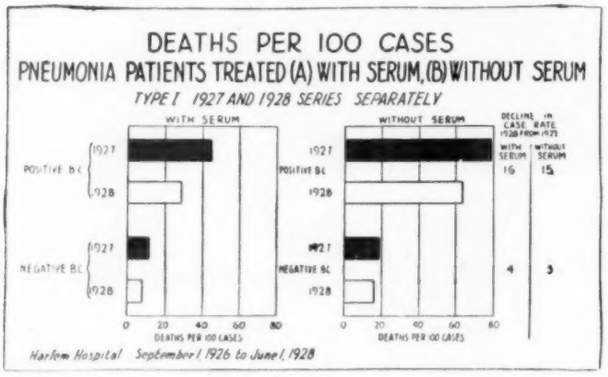


Percentage distribution of pneumonia cases by type and mode of treatment in the Harlem Hospital, New York.

Pneumonia usually commences with a chill or a chilly sensation followed by a rise in temperature and prostration. The pulse rate may not be rapid and at the onset the patient may not appear very ill. Frequently there is severe pain in the side; this is especially true when there is an accompanying pleurisy. Later there may be a cough and rusty sputum. As

the disease progresses, the prostration becomes worse.

In fortunate cases, at any time, usually in seven or more days, the temperature suddenly falls, and the patient is practically well. This fall in temperature is due to the development



Deaths per hundred cases in patients with type I pneumonia treated with and without serum in the Harlem Hospital. BC indicates blood culture. A decline in case rate from 78 per cent to 42 per cent means that, instead of four patients out of every five, only two out of five died. In 1928 a decline in the case rate from 62 per cent to 24 per cent means that, instead of three out of five, only one out of four patients died.

in the blood of antibodies, which neutralize the poisons made by the bacteria. All patients who recover develop antibodies but patients may not recover, even though they do develop them, because of some complication or other condition. Seventy or 80 per cent of those infected develop antibodies naturally and may recover without the aid of a serum containing the special pneumonia antibody needed.

When any of the symptoms suggestive of pneumonia arise, a physician should be called; he should determine the measures to be taken. The patient should immediately surrender to the disease and keep warm in his bed. Will power will not produce antibodies. There are many elements involved in recovering from pneumonia in which will power counts to the extent of determining the outcome, but it is not in the necessary production of antibodies.

The doctor can have determined the nature of the organism invading the patient; he may, even before this is determined, administer the proper antibody, which has been developed in horses, to the patient.

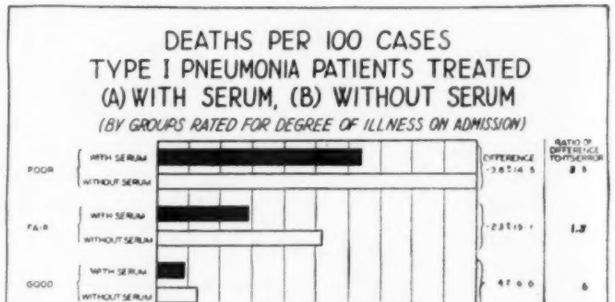
More than 50 per cent of all pneumonia due to pneumococci are occasioned by the types known as I and II, and for these there is available a potent serum. The antibody serum acts either by preventing the entrance or by assisting the body to destroy the organisms that have gone into the blood. When the blood stream has been entered, the outlook for the patient is worse. Blood cultures or samples of blood, properly mixed, may be taken, and after a number of hours will show whether organisms are in the blood. In the presence of type I or type II organisms in the blood, refined serum may be given by the physician, even though it has been omitted previously.

The doctor should direct all the details of the nursing care upon which so much of the result may depend. He should determine whether or not oxygen is needed. Oxygen is sometimes administered to patients with pneumonia because the area in the lung from which oxygen may be absorbed is diminished. Ordinary air contains 20 parts of oxygen; it is an advantage to increase the oxygen percentage to 40 parts, and sometimes it is helpful to increase it to 50 parts.

The special measures to meet pain and the special stimulants that may be necessary must be left to the judgment of the physician. Many physicians regard alcohol as a stimulant; it is so only for patients who are accustomed to it. In my experience, it is not a necessary part of successful treatment, except in the accustomed user.

The best cardiac stimulant is the proper amount of oxygen in the blood to the heart. This, when necessary, is obtained by increasing the oxygen concentration of the air. If that is done, as much as possible will be absorbed through the undiseased lung. Neutralization of the poisons may be effected by the antibodies when appropriate serum is available.

In short, the treatment of pneumonia consists in rest in bed, plenty of moving, dry air, enrichment of the air with oxygen, and neutralization of the poisons elaborated by the pneumococci by a serum containing the antibody for the type, when available.


DEATHS PER 100 CASES
TYPE I PNEUMONIA PATIENTS TREATED
(A) WITH SERUM, (B) WITHOUT SERUM
(BY GROUPS RATED FOR DEGREE OF ILLNESS ON ADMISSION)
POOR
FAIR
GOOD
WITH SERUM
WITHOUT SERUM
DEATHS PER 100 CASES
Harlem Hospital September 1 1926 to May 15 1928

Deaths per hundred cases in patients with type I pneumonia treated with and without serum by groups, rated for degree of illness on admission. No patients that were rated poor were saved without serum, whereas three out of five were saved with serum. In the patients rated fair, one half of the patients that were not treated with serum died, while only one out of three in the serum treated patients died.

Serum treatment of pneumococcus pneumonia promises to be as great an advance as antitoxin is in diphtheria. It should be administered as early as possible. Besides reducing the death rate, it seems to shorten the illness for those who recover and to make it less severe.

The BABY that CRIES at NIGHT

By William J. Corcoran

It's father's turn to walk with the baby.

THE complications of the family budget are simple to solve when compared to the enigma parents have on their hands with the baby that cries at night. Most babies at one time or another have restless nights, and it seems the natural supposition that all babies are entitled to some sleepless nights. But there are some babies who consume their liberal allowance and then, for no good reason, cry for more.

Legitimate Reasons for Night Crying

In justice to many naturally good babies who cry at night let it be stated that there may be legitimate reasons for their restlessness. Common among them are the following: too many clothes; too much bed covering; imperfect ventilation of bedroom, and too much attention. The new-born baby in the modern hospital nursery is clothed and covered lightly. Proper ventilation is maintained, and the temperature of the nursery is 70 F. or less. The infant is not picked up except for his bath, when diapers need to be changed and at feeding time. He sleeps most of the twenty-four hours. Vigorous babies and those whose food demands are above the accepted average usually whoop it up for half an hour or so before feeding time. But in a well ventilated room such outbursts, accompanied as they are by setting-up exercises, are a good thing from a health standpoint and should not be discouraged.

The day of departure from the hospital is often the beginning of a good baby's downfall. Instead of being clothed as he was in the hospital he is required to wear two or even three times more clothing, and blankets are piled high upon him. Counsel from relatives and friends concerning drafts in the baby's room and the dread of his catching cold all too frequently deprive him of sufficient fresh air. And when the little fellow begins shouting for food ahead of meal time he is too often picked up, rocked, and cooed to in an effort to keep him quiet. Once a baby tastes the soothing syrup of arms that rock and learns that whenever he cries he will get this delectable potion he becomes an addict.

All of which is not to say that a baby is not entitled to some display of affection in his parents' arms. He certainly is entitled to it and ought to have it, but such pleasure should be indulged by parents when the baby is content and not when he is dissatisfied with this or that.

There are a few other causes for night crying in naturally good babies. Underfeeding, overfeeding, irregular feeding and improper diet cause digestive distress that the family physician can correct. Infants who are ill from infection or from other diseases are ungrudgingly allowed restless nights.

Few Babies Have Such Good Reasons

In a much larger group of babies the explanation of sleepless nights is not to be found among the causes enumerated. When a medical examination reveals no physical ailment or feeding disturbance and the baby is made comfortable it is unnatural for him to remain awake.

Babies of this group are usually of the high-strung, nervous type. They are finicky about their food. Some drain the bottle as though they had been starved; others push the bottle away as though it were medicine. They demand

He was good in the hospital; the day he went home was the beginning of the baby's downfall.

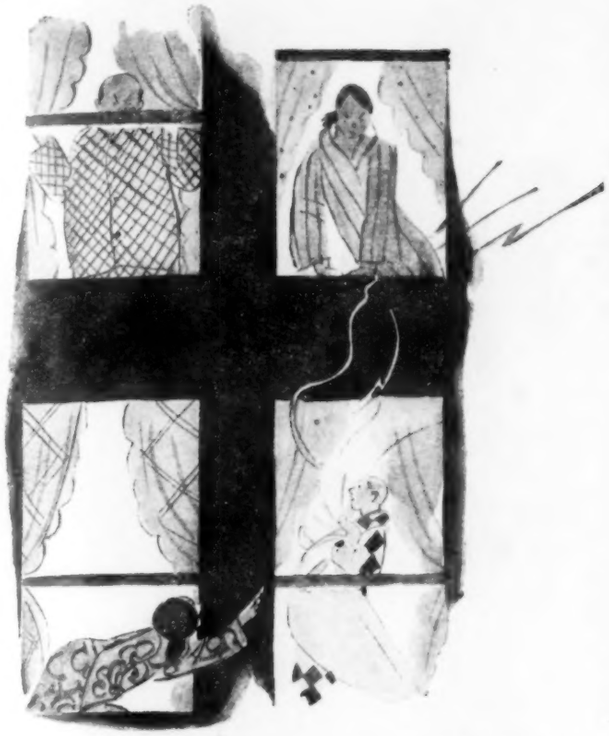
attention at every turn. On waking from naps the mother, the grandmother or the nurse is expected to be standing by ready to administer to their whims. Toys hold their attention only while shiny and new. They want to be held in the arms and they find amusement and diversion in their play pens for brief periods only.

An outing in the baby carriage is enjoyed if they are propped so they can see everything that is going on about them, and the baby carriage had better be kept in motion or they will assert their rights in public. Most of these babies prefer a ride in an automobile to one in the baby carriage. Such infants seem most content when some one is making a fuss over them or stimulating their sensitive little nervous systems with some complicated form of play. They are bundles of nervous vitality.

When night comes and one of these little youngsters is tucked away comfortably in his crib the real fun begins. It is likely that he would prefer to go right on playing so long as his eyes remain open. Fortunately, however, fatigue has a soporific effect, and after a period of vehement protestations sleep overcomes him. If there is anything to the theory that life is merely an accumulation of electrically charged atoms, then these babies that cry at night must run on an alternating current. After an hour or so of sleep, during which time the anxious parents are afraid to make a sound, the baby wakens, tosses about in his crib until thoroughly conscious, and then cries. The mother goes to him, sees to it that no pins are sticking him, changes his diapers, talks soothingly to him, offers him water, closes the windows so the neighbors can sleep, and finally in desperation picks him up and rocks him back to sleep. After a month's practice most mothers acquire a knack of slipping the baby back into his bed without letting him know it. And it is amazing how deft a great big man can become at this operation. A father may be clumsy and uncertain in his handling of the baby during the daytime, and not infrequently is the recipient of admonitions from the mother not to drop the baby, but he becomes an artist in the dark of night when it is his turn to "see what's wrong with the baby."

Night after night this sleeplessness continues and night after night the same remedy is employed to correct it. One wonders why parents cannot reason cause and effect. But in most cases the parents are themselves of a nervous temperament and think it quite natural and proper that their baby should have an abundance of attention during the daytime. Such parents are devoted to their baby. Every whim of the baby is gratified. They do not have any more real love and affection for their baby than the parents of the baby that does sleep at night, but the difference lies in the manifestations of this love and affection. A baby is quick to see the difference. If the parents are calm in the presence of the baby, the baby's temperament is molded by this influence; if parents are emotional about the baby then surely the baby will be the highly pitched bundle of nervous energy that has been described.

The rapidity of the pace of modern existence with its tension and excitement and the crowded conditions of apartment life may help to explain why so many parents are nervous about their babies. Such conditions certainly do not make for a calm environment. None the less if such



Disregard the neighbors, put the baby in his bed and let him cry.

conditions are present, parents should try to exert a calm influence on their child's daily life. Babies that are not overstimulated during the day are quite ready to sleep at night.

Once the child's day is organized with principles of proper training the task of overcoming nocturnal disturbances is simple. The remedy takes from a few nights to a week to produce permanent results. Any one who has had even slight practical experience with babies that cry at night knows full well that what such babies cry for is company, and that attention must be administered in some one's arms to the crooning notes of a lullaby or in the soothing motion of the child's crib. Any one who has had such experience need not be reminded that, when attention is given, the child stops crying and goes back to sleep.

There is nothing complicated about the remedy. It is well to be sure that the baby is comfortable and, then, simply disregard the crying. Sooner or later, that is to say in from a few nights to a week, the baby has learned that crying doesn't get him attention and he is intelligent enough not to waste his energies in crying for something that he knows he will not get.

From time to time tired parents have a conference on the matter of their continuous loss of sleep and arrive at the very conclusion just stated. They agree that any physically healthy baby that is made perfectly comfortable at night in bed ought to sleep. They decide to let the baby cry it out. The braver of such parents are rewarded for their determination. Others try it out for a night or two but when they hear the banging down of their neighbors' windows or answer the phone call from some neighbor who inquires if something cannot be done to keep the baby quiet, their determination totters and all is lost. One cannot disregard these babies for a few nights and then give in. Once started the outcome hinges on who's the better man.

When Do I Eat?

A subscriber to HYGEIA, who is a practicing pediatrician, received this communication recently from the mother of one of his patients, aged seven months.

I AM 7 months, weigh almost 20 pounds and still on a bottle, I'll be bound. I get no solid food but cream of wheat; now, Doctor, when you gonna let me eat?

Two lower teeth, two uppers peeping through; what good are they unless I get to chew a chicken leg or else some good red meat; now, Doctor, when you gonna let me eat?

Why, I can sit alone! And soon I'll walk; and then the next thing I'll begin to talk; the neighbors all will know I'm on this street, because I'm gonna yell, "When do I eat?"

When do I get some carrots just like gold, and Jello, it is good, so I am told? When do I get some ground up steak or roast? When do I get some soup and nice dry toast? Spinach is nice when through a sieve it's rubbed. I'm hungry, Doc, when do I get some grub?

You know I'm Dad and Mothers' pride and joy; and I'm a great big, healthy, hearty boy. But I can't always laugh and keep so sweet, unless I have some grown-up food to eat.

Hungrily,

JUNIOR

P. S. I know that you're a very busy man, but make me out the longest list you can. We will not call, nor ask a single question, unless, of course, I should have indigestion. Then Mother will perhaps call up to say, "It's all your fault"; for women are that way.

How to Control

By Harold

PRACTICAL measures for preventing outbreaks of communicable disease in schools concern both parents and teachers and affect the welfare of the children. Many parents shift to the school authorities the entire responsibility of maintaining health in the schools and many teachers do not receive the parental cooperation they need. No school district can obtain control over the health of the children without maintaining a mutual cooperation with the parents and with the local health authorities.

Parents should realize that every reported, isolated and quarantined case is just so much protection of their own children. Even a whooping cough placard on their own house will assist and make easier the placing of a diphtheria placard on their neighbors'. Parents who decline to have a physician in order to escape quarantine are stepping into danger, because many a sore throat regarded as of little consequence terminates in a death from diphtheria or as permanent damage from scarlet fever; either is preventable by early medical attention. Those who decline to have a less serious disease placarded are setting dangerous examples to persons who have malignant diseases in their homes.

Diseases Should Be Reported

It is necessary that all cases of contagious disease be reported. Physicians are required to report the cases they see, but physicians do not see all the cases, not even all cases of diphtheria or smallpox. During ordinary times the doctors do not see half the cases of measles, whooping cough, mumps or chickenpox, and during an outbreak not more than one fourth of these cases or more than three fourths of the cases of diphtheria or scarlet fever. The unreported and uncontrolled cases spread the infection, and general public cooperation is necessary to round up these children to check the outbreak.

Teachers are required to report known cases. These reports must be made to the local health officer promptly by telephone; they should be followed by a written report to correct any misunderstanding or error in the telephone call. It is not sufficient for a teacher merely to exclude a child with a contagious disease, advising him to consult a physician or requiring a certificate to admit the child to school on recovery. Unless the health officer is immediately informed of the case, the child will spend the days out of school in scattering the infection. When a school physician is employed he may see the child, but this examination must be done promptly and in a manner to safeguard the public.

The reporting by parents of contagious diseases in the home is required by law in many states. This cooperation is essential as a means of protecting their own families and others.

Neighbors who report cases that are definitely known to exist are helpful to the health activities in their communities, but if they are not certain of their statements or are reporting only for spite they become a hindrance. Health officers receiving reports from neighbors should not disclose the source of their information.

May Help to Curb Epidemic

Reports of every case of contagious disease are needed in order for the state and local health authorities to know the definite state of

Diseases in School

B. Wood

affairs, to know what schools and what individual classrooms are involved, to note the progress of the outbreak, to determine where carriers may be located, to hunt up and control the spreaders of infection, and to determine what other measures should be applied to help the local community.

The local health officer should extend his cooperation to the schools by promptly furnishing to them the names, ages, addresses and diagnoses of the various persons known to him to have contagious disease. His activities, including quarantine measures, must be prompt, else his services may be of little value. Only by rapid work can diseases be suppressed.

Parents and teachers should become acquainted with the signs of the various diseases and should know when to suspect them; suspecting them, they should then call for medical service and should not regard an apparently mild attack of a disease as of little consequence, as scarlet fever cases with rashes that are scarcely perceptible sometimes end in death.

Parents Should Detect Symptoms

Parents should watch their children for signs of illness and should not send to school any child with a rash or breaking-out on the skin unless a physician says that it is not communicable. When children vomit or develop a cough or sore throat, they should be kept home until a definite diagnosis can be made. Many a parent has considered a sore throat of little consequence, only to learn later that the child is dying of diphtheria or that his kidneys have been destroyed by an unsuspected attack of scarlet fever.

The effective control of the contagious diseases within a school is best considered separately for each disease. When any disease is known to involve a class immediate examinations of all members of the class should be made. On the two following days other examinations should be made, in order to detect developing cases in other children who were exposed at the same time as the first known case. The examination may be sufficiently complete to cover all communicable diseases, including skin diseases and head parasites, if the class has not recently been inspected, or may be only for signs of the particular disease. Subsequent examinations are made after the end of the incubation period of the disease and should be repeated during two or three successive days.

Early Signs of Common Diseases

The common contagious diseases with their signs for detection and special measures of suppression follow. The state and local laws, which vary somewhat, should be known to the school authorities and must be followed by them.

Chickenpox.—When first noticed, chickenpox may appear as small blisters or dried crusts, usually each spot being surrounded by a large, irregular pink area, most numerous on the body. In early stages, the case may be detected by the little blisters on the neck or near the edge of the scalp. A later case may show various sizes and stages of development in the rash. Exactly fourteen days after the first appearance of a case of chickenpox in a classroom, and on three subsequent days, reexaminations

should be made for secondary cases. Each child with evidence of chickenpox should be sent home at once and the case reported to the health officer.

Diphtheria.—The disease may be suspected when a child develops sore throat, fever, enlarged red tonsils, hoarseness or nasal discharge, and especially if a whitish patch appears on a tonsil. Two patches on a tonsil almost invariably indicate harmless tonsillitis, but no child with tonsillitis should attend school. The incubation period is usually two or three days, so secondary cases quickly follow the first, unless a diphtheria carrier is causing the infection. When two or three or more cases of diphtheria develop in a particular class, indicating the probable presence of a diphtheria carrier, it is almost useless to depend on visual examinations of the throat. It is positively dangerous to depend on closing and fumigating the school. Cultures should be made of every child in the class in order that the diphtheria carrier may be discovered, excluded and quarantined. Children who have recently recovered from diphtheria should not be admitted to school until cultures made from the deep recesses in and around the tonsils show them to be free of diphtheria bacilli.

Measles Is Controllable

Measles.—After an incubation period of from seven to nine days following exposure measles makes its advent by coughing, sneezing, redness of the eyes, or occasionally by nosebleed. Frequently the rash is the first sign noticed. Many cases have Koplik's spots (small bluish-white spots surrounded by a reddish areola on the mucous membrane of the cheeks and lips) preceding the skin rash. The general rash is blotchy and may occur first about the neck or chest or on the roof of the mouth.

Measles is a controllable disease. When, however, a case appears in a susceptible class, within a few hours all are exposed and probably 80 per cent of the susceptible children will develop the disease from this first exposure. These children should be sought quickly and should be prevented from spreading the disease to other classes or schools. As soon as a child with measles is discovered he should be excluded from school immediately and the health officer should be notified. A list should then be made of all children in the classroom who are coughing. If the first case is suspected of having become infected in the school building, these coughing or sneezing children should be excluded and watched at home. The entire class should be carefully examined for cases of redness of the eyes, blotchy throats or skin rashes, and the possessors excluded.

This individual examination should be continued for three days. If the evidence shows the first known case is a real importation, the children who are coughing or sneezing from any cause should be listed; at the end of five days this list should be revised; at the termination of seven or eight days the coughing and sneezing children should be listed and all who were not included on the previous lists should at once be excluded for a few days until a definite diagnosis can be made. Most of those children will be in the early and most infectious stage of measles. After the nine day period the entire class should be carefully examined for red eyes, blotchy throats and rashes, and the owners thereof excluded and quarantined. This system will definitely control a measles outbreak in school.

Mumps.—The incubation period of mumps is variable but usually is about two weeks or slightly longer. Mumps makes its advent by pains or swellings in front of the ears. Mumps is an infection of the salivary glands, not of the lymph glands down the neck. The parotid gland, which is usually involved, is in front of the hole of the ear, not below the ear, and cannot be felt when normal. When there is an outbreak of mumps in the classroom suspects should be found and excluded.

Scarlet Fever.—The incubation period of scarlet fever is short, usually from three to five days. The disease usually begins with a sore throat or vomiting, the rash quickly following. When scarlet fever appears in a schoolroom daily, individual scrutiny should be followed out for a week in a search for other primary or for secondary cases. Any child showing signs of peeling of skin from his hands, fingers or neck should be excluded. If the child will admit a previous sore throat, vomiting or other symptoms, the exclusion of the desquamating child should be for the legal quarantine period dating from the date of early symptoms.

Diagnosing Whooping Cough Early

Whooping Cough.—From about ten to fourteen days following an exposure to whooping cough, the susceptible child begins to cough and then is in the most contagious stage. When a class is known to have been exposed, all children must be closely watched and the character of all coughs observed. The cough, at first without any particular quality, soon assumes a spasmodic character in which there are spells of continued coughing followed by long rest periods.

Whooping cough can in this way be diagnosed long before the whoop appears. Some children never whoop. The spasmodic cough, especially with spitting or vomiting, demands immediate exclusion, reporting and quarantine. Children who begin to cough about ten days after a class has been exposed to whooping cough should at once be excluded until a defi-

nite diagnosis of their condition can be made.

Schools are frequently closed during an outbreak. The usual effect is to disseminate the infection. The children who are just developing symptoms of the disease and are therefore in the most infectious period of it have the opportunity while out of school to expose their young neighbors and to spread the infection into other school districts that would not otherwise have become involved. Few of the children from a closed school will be kept under daily intelligent observation. Some authorities, however, close schools, particularly with scarlet fever outbreaks, for which disease the desired results are the most hopeful. This closure is effected with the hope that all children who are going to contract the disease will at once develop symptoms and will remain home and consult their physicians. The results obtained are not always what were expected.

When schools are closed because of an outbreak of disease, all young children of a community and older susceptible children should be kept at home away from assemblies of other children, away from the movies and away from Sunday school in order to escape the disease. In cases in which no effective daily examinations of the children will or can be made in school, closure is attempted; this also takes place when an entire school is swamped with infection. Much better results, however, are obtained by keeping the schools in session and the children under daily intelligent observation with individual examinations for early symptoms of the disease in question. In diphtheria outbreaks it is dangerous to depend entirely on school closure, for on the opening of the school the diphtheria carrier returns to school and continues spreading disease and death.

Whether the schools are closed or kept open, full publicity should be given to the situation to appraise the parents of the outbreak so that they know what disease or symptoms to watch for.

Bellevue-Yorkville Health Center

New York City babies are being immunized against diphtheria in forty-four special diphtheria prevention stations. Dr. Bela Shick, the Austrian scientist who originated the Shick test, is immunizing a baby, while Health Commissioner Shirley W. Wynne holds a second child.

How Diseases Are Spread

Contagious diseases are spread by infected persons who have the germs within their bodies or by certain objects that recently have become infected. The persons who spread diseases are those who are in the beginning stages or have mild attacks, who are convalescing but are still infectious, or who are carriers. The germs are usually within their mouths or throats and from them are spread. To a considerable extent, however, some communicable diseases are transmitted by dirty hands.

Contagious diseases are not spread by what are termed third parties; that is, by clothing. When clothing has been coughed over or vomited on by a child with a contagious disease it becomes infected and to a degree dangerous for a limited time. Other children should not become intimately exposed to such clothing, but it should be laundered, cleaned or brushed, exposed to the air and laid aside for a while, and the germs on it will quickly die.

Disinfection of School Books Impractical

Health officers, physicians or nurses do not endanger the public by their visiting contagious cases.

Objects that very recently have been infected can spread infectious disease. Because of this known danger, the public drinking cup and the public towel have been prohibited. In schools, the pencil that is distributed indiscriminately is as great a danger as the public towel. The indiscriminate use of public pencils should be prohibited.

Objects, in order to spread infection, must have been recently infected. Reports that cloth-

ing stored over winter has spread scarlet fever are inconclusive and are not accepted as evidence by health authorities. The writer has heard of only one instance in which books have spread scarlet fever. In this case a boy with scarlet fever was excluded from school and the next day a new entrant was enrolled and given the other boy's books; he promptly developed the disease.

The destruction of school books and other valuable property that have been handled by children with contagious diseases is not advisable, nor will it accomplish anything. The disinfection of books is not practical. When children have been excluded from school because of having or carrying diphtheria or scarlet fever, all their property, books and papers should be laid aside until the end of the quarantine period and then returned to them; they should not at once be given to other children. With the other common contagious diseases this precaution is not necessary. When diphtheria or scarlet fever develops in a class, because infected hands can spread disease, the desks, door knobs and other objects touched by the infectious children should be wiped with cloths wet with some antiseptic solution. But to rely on sprinkling a disinfectant over the floor and to neglect personal examinations of the children in an attempted control of an outbreak is dangerous. Neither do deodorants in schools or elsewhere prevent disease.

Fumigation Is Useless

When fumigation first was advocated by health authorities it was in the days long before it was known how contagious diseases are spread, before the germs causing scarlet fever, mumps or whooping cough had been discovered, when people erroneously believed scarlet fever was spread by scales of skin and malaria by air. Those are ancient of days, but some school boards and more parents have not emerged from the ruts of former ignorance. They frequently burn a few formaldehyde or sulphur candles in a schoolroom hoping to control an infection that is in the throats of the children and not in the air they breathe. Persons, not inanimate objects, are infected and spread contagious disease. Nothing can be accomplished by fumigating schools, and the act makes parents believe their children have been protected when they have not.

Children can definitely be immunized against smallpox, typhoid fever and diphtheria and with less satisfaction against measles, scarlet fever and whooping cough.

The immunization of children against communicable disease should be regarded as a prophylactic measure and not as a means to check an established outbreak. It is cheaper and more convenient to prevent than to combat contagion.

Immunization requires time and if the infection of a disease is already within the body the effect of the immunizing agent may be of little avail. Immunization is done to assist the body to build up its own defense against disease, except in the use of antitoxin, which acts more as a neutralizer. To immunize against smallpox requires several days; successful vaccination performed within three or four days after exposure to smallpox will protect the individual, done on the fifth or possibly sixth day it will ameliorate the attack of smallpox, but if not given until later it will have no effect. To obtain immunity from typhoid vaccine requires about six weeks and about as much after giving toxin-antitoxin for preventing diphtheria. If, therefore, a school well becomes contaminated by typhoid discharges or a class infected by diphtheria bacilli, the typhoid vaccine or the toxin-antitoxin will be of little service.

The time to administer smallpox vaccine is when the child is a baby and again just before entering school. The time to immunize against typhoid fever is any time after the third month of life and long before the person gets infected by typhoid germs. The time to give toxin-antitoxin to protect against diphtheria is during babyhood when the mortality rate of diphtheria is the highest.

It seems safe to advise that children be immunized against scarlet fever long before reaching school age, and certainly the scarlet fever vaccine should be given to the well members of infected families. Immunization against measles by human or horse serum is not beyond the experimental and theoretical stage, but it yields a hopeful vision of countless babies' lives to be saved by this or other means in the future. Whooping cough immunization, now but on the road toward success, is another dire need for helpless, distressingly sick or dying babies.

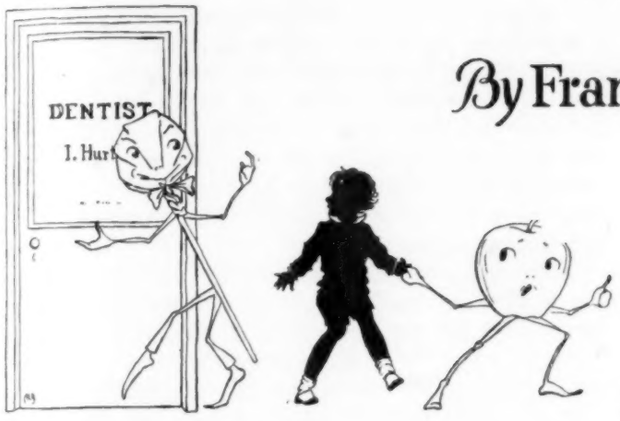
Value of Immunization Proved

Statistical evidence proves the value of these various immunizations and also the wisdom of laws requiring the vaccination of school children.

The community that, through the schools, promotes successful annual campaigns to have the children, including those of preschool age, completely protected by immunization against smallpox and diphtheria, and also against scarlet fever and typhoid, will be accomplishing an outstanding benefit in safeguarding the lives of its little ones.

The Runabout Child and his Problems

By Frank Howard Richardson



VIII. The Teeth

HOW early should the care of the teeth of the runabout child be begun? Is it time enough if we begin when the first baby tooth appears, or should we commence preparing the mouth for the coming of the first set by washing it out with boric acid solution and the time-honored cotton-tipped toothpick, as we used to be told to do by the baby books?

Neither of these, unfortunately, is early enough to start. Both are, on the contrary, too late by just about two generations! What, you say, are we to hear repeated in connection with the teeth the dictum of that fine old physician, Oliver Wendell Holmes, about the wisdom of a child's choosing his grandparents carefully?

Just so. For we have come painfully to realize that the slogan, "A clean tooth never decays," resembles most other hard-working slogans in that while it tells the truth, it does not tell the whole truth.

Teeth Formed Long Before Birth

Before the fifth week of prenatal life, the foundations of the second, or permanent, set of teeth (not the baby teeth, that is to say, but those that are designed to go with us throughout our whole lives) begin to be laid down. Even before the prospective mother becomes definitely aware of the fact that she is to become a mother, what she eats is influencing the condition of the permanent teeth of the man that is to be. No amount of care of his teeth during the years to come will be able to make up for any structural deficiency at this time. The tooth that is structurally faulty is going to break down long before the one that was built right at the start.

The dentists have gone far ahead of the doctors in their recognition of the importance of nutrition in the structure of the teeth. Foods containing an abundance of lime—milk, for instance, and leafy vegetables, which are the classes of foods that are richly supplied with this necessary substance—are essential in the diets of both mother and child if the teeth are to be sound and resistant to decay. Phosphorus, present in milk, is another important constituent of the teeth.

Need Some Coarse Foods

An interesting instance in support of the contention that foods are highly important in the preservation of the teeth is furnished by the experience of Doctor Fones, an eminent dental authority. He found in the children of Hawaii an average of dental decay practically the same as that occurring in this country; yet the ancestors of these children, as shown by their skulls preserved in the museum there, were practically free from dental caries. The only important factor to which he could ascribe this difference was the diet, the children of today being fed on devitalized and devitaminized products, whereas their ancestors had been fed on coarse, unmilled, vitamin-containing foods.

But foods have another important bearing on the condition of the teeth. Not only are they of prime importance in the building of teeth and bone but the chewing necessary for preparing them for digestion helps greatly both in keeping them clean and in improving the health and the tone of the gums. Unfortunately, civilized man

today is not doing nearly as much chewing as his ancestors used to do. He is allowing the manufacturer and the cook to soften the foods that he and his children eat to such an extent that mastication cannot be satisfactorily performed. The proper shaping of the bony arch of the jaws is directly dependent on the proper exercise that the chewing of hard foods furnishes. The squirrel fed on soft food instead of having to gnaw hard nuts soon finds his teeth growing to inordinate lengths. While the child is spared this misfortune, he suffers a no less serious damage; for if his dental arch is underdeveloped, his teeth have too little room. This results in a faulty "bite," the correction of which serves to enrich the orthodontist, as the dentist who straightens faulty teeth by enlarging meager jaw space is called. Hard crusts, fruits and other foods that necessitate chewing and at the same time clean the teeth should be included in the diet of every runabout child.

Excess of Sweets Is Harmful

The much talked of disease production due to dental decay is of course not nearly so important a factor in the tiny, short, shallow-rooted deciduous teeth of the runabout child as it is in the deeper thrusting roots of the permanent teeth. On the other hand, the teeth are themselves definitely affected by the diseases of childhood. These record their occurrence clearly in both temporary and permanent teeth and damage them definitely and permanently. It is frequently possible to say with a considerable degree of accuracy at what age a child has had measles from the location of the lines or ridges that the disease leaves on his teeth.

In addition to the bad effects of soft foods, which are negative in that such foods do not necessitate chewing, there are the positive harmful effects of sweets in causing dental caries, as decay of the teeth is called. This is due to the acid reaction of sugar that remains in the mouth. While this may be reduced by the simple practice of brushing the teeth after partaking of food, especially of between-meals sweets such as candy or drug store drinks, still most children are allowed by their parents to consume an inordinate amount of sugar, and chiefly the least desirable, refined cane sugar at that.

The per capita consumption of sugar in America today is eight or ten times greater than that of the average European or of the average American of a hundred years ago. It has been found that the teeth of Italian immigrants are far superior to those of American children of the same age, and that after arrival in this country they deteriorate more rapidly than do those of children in Italy in the regions from which they came.

After all has been said about the nutrition and general building up of the teeth, there remains the question of their care by the child himself, the parent and the dentist. The following procedure is advocated by the Oral Hygiene Committee of Greater New York for all dental school work and may well be taken as a minimum standard for children's dentists.

1. Careful cleansing of the mouth.
2. Removal of all unsavable teeth.
3. Special care of all permanent first molars.
4. Temporary teeth filled or cavities treated with nitrate of silver.

The fourth point should be stressed especially, as many parents believe that because the temporary teeth are soon to come out their preservation is unimportant, and because some dentists are not willing to urge such repair because of the effort it takes to convince the parents. Decay of the temporary teeth is of the greatest importance, for if these teeth are prematurely lost they fail to hold the spaces needed for the permanent teeth.

Especially is this true of the first permanent, or six year, molars. These have been well described as the keystone of the dental arch. If spaces for these important teeth are not held or if after they come in they are allowed to decay and to go untreated under the impression that they are temporary rather than permanent teeth (as so often occurs), the whole "bite" of the child's mouth is deranged. The painful results that ensue necessitate the expensive and long-drawn-out efforts of the orthodontist if there is not to be permanent deformity.

Proper Brushing

The three steps in the proper brushing of the teeth, as advocated by the Oral Hygiene Committee quoted above, are as follows:

1. Brush the outside surfaces of the teeth and gums of both the upper and lower jaws.
2. Brush the inside surfaces of the upper teeth, the gums and the roof of the mouth and of the lower teeth and gums.
3. Brush the tops, or the grinding surfaces, of all the teeth.

The motion advocated is a circular motion, executed rapidly so that the gums are stimulated and the teeth cleaned at the same time. This should be done at least twice a day, and as we wash our dishes after each meal, it hardly seems too much to ask that our children do as much for these nonreplaceable dishes of theirs.

The use of dental floss between the teeth is another sound preventive measure. Another desirable practice consists in rinsing out the mouth occasionally with lime water, which dissolves the deposit of mucin that clings to the teeth permitting the growth of bacteria. To quote the Oral Hygiene Committee again: "If but one thing could be used to prevent decay, lime water used three times daily would prove to be the most valuable."

BRAINS
A MATTER of RELATIVITY

By Donald A. Laird

THE commander of a great army training camp during the World War was busy attending to the preparation of regiment after regiment of newly made soldiers for active duty in France. Through all the hustle and bustle of his work he noticed that a regiment, otherwise fitted to embark for foreign shores, would have to be kept back for several weeks on account of the slowness of a single company to master the rudiments of soldiering.

A whole regiment delayed because of one slow company! Men were being kept from France because a few others were slow to learn —and just when the crying need was for men.

The commander thought at first that the officers might be at fault, but when a transfer of officers brought no noticeable improvement, he began to wonder if their slow progress might not be due to the men themselves.

When psychologic work in the army was organized, the psychologists brought an answer to this troubled camp commander, and an answer that is incidentally of immense significance to every man —the relativity of brains.

Remember back in the elementary school how the oldest child in the class was an undersized boy who answered to the name of Shrimp? Then, in contrast with him, was the youngest member in the grade, a chubby, chunky girl who was tormented to desperation by the boys, who called her Butter and Fatty. These are not unusual cases of individual differences in size.

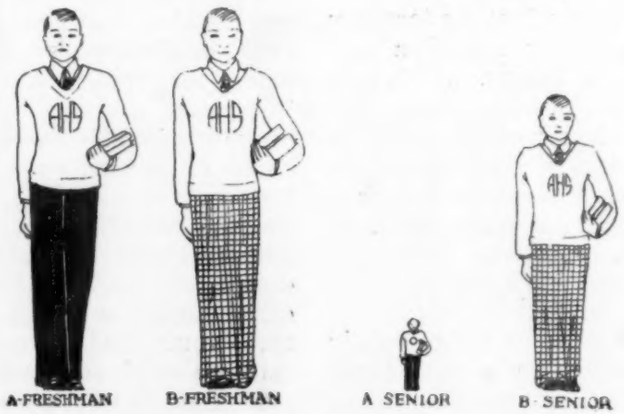
Butter was promoted because she outgrew the seats in the grade below and Shrimp was not promoted because he enjoyed life and bothering his teachers too much to be concerned with his studies. Every one in the grade knew that Butter was dull and that Shrimp was as smart as a whip.

School children of the same age may differ markedly in height and weight, but they may differ by as much as 300 times in musical ability. Physical differences are as nothing compared with the enormous differences that may be found in mentality.

In a single classroom, supposedly devoted to the education of children of the same age and mental abilities, startling differences in mental powers have been discovered. Professor Terman studied a class of fifth grade children; in this he found some children with a mental equipment capable of doing the work of the first year in high school, and others in the same grade had a mental level equal to that of the average child in the first grade. There is individual difference for you!

What is true of school children is true for high school children, college students and adults. Folk may look equal in mental ability on the outside, but it is inside information that counts. In anything above the most menial of tasks, brains count most, and even in the case of the most unskilled day laborers brains make a big difference.

It used to be that the only way for a person's brains to be estimated was to try him



The boy on the left in the black trousers represents the students with low intelligence who enter the freshman class in an Eastern high school. The boy in the checked trousers represents the freshmen students with high intelligence. At the right we see how many of the original groups are left in the senior year. Four years of schooling has not improved their intelligence. The seniors are more intelligent because 80 per cent of those with less brains have left school.

out in a job and see if he made good. But, of course, that was an expensive way to proceed. If a person was tried for a month, receiving pay all the time, and then was found not to be able to make good it was a costly process.

Intelligence tests were given to a group of ordinary day laborers engaged in digging sewer ditches. In this group some men were found with an equipment of brains equal to that of the average lawyer. Still these men were content with digging ditches. They were serving in this world as ditch diggers when they had the brains to make good lawyers. Ditch diggers are necessary, of course, but why not demote some of the poor lawyers to this task and let the intelligent ditch digger study law?

The height of these children indicates the intelligence score made by the three social classes represented. All the children attended the same schools in a town of 12,000 in Indiana.

Mere opinion about intelligence or brains is not at all trustworthy. Teachers in a California city school system were asked to pick out of their students those whom they thought to be feebleminded and in need of special attention on account of this deficiency in brains. The teachers selected half a hundred pupils as feebleminded. Then psychologic tests were given to determine whether these teachers had good judgment in this matter. The results were embarrassing to the teachers.

Among the group of children that the teachers called mentally deficient were found a few much above the average in brains. Such was the case of a little boy in the fifth grade. His teacher thought he was feebleminded, but he was in reality the brightest boy in the grade. He was two years younger than the average child in that grade and still he managed to do fairly good school work.

Intelligence Tests

Intelligence or brains cannot be estimated, in order to find out how much there is of it or how well it is working; it is necessary to use tests; tests that test brains and not education.

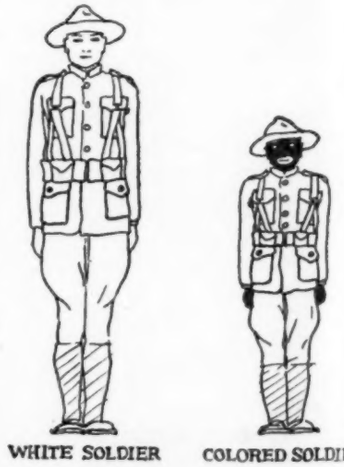
A group of 14,000 college men who had been drafted into the army were given the regulation army test of intelligence that was developed by psychologists. This large group made an average score of 97 points on the test.

Then a group of army officers was selected. There were 660 officers in this second group. Not one of these officers had as much education as the college freshman, and yet the average score for these lesser educated officers was 107.

Ten points difference! It was not education that was being tested or the college men would have ranked higher. It was brains. Some tests of intelligence have been used that do not involve language at all. The National Committee for Mental Hygiene is making statewide surveys of the intelligence of school children in some states. They have a test of brains that they can use on first grade children who do not read or write, or even understand English. It can be used on the Pima Indians just as accurately as on college graduates.

Education does not seem to improve one's regular equipment of brains. Children who are found by tests to have a little less than the usual modicum of brains in the first grade are still a little behind the average child when they are in the fifth grade, and in case they reach the eighth grade, they still test a little below the average, or so-called normal, child.

Intelligence is not increased by going to college. Neither is it a chance affair. Parents with brains much above the average have children with brains much above the average. Brains seem quite definitely to be inherited, just as eye color, stature or temperament. This also explains the reason that occasionally in an unusually brainy family one mental black-sheep, a feebleminded child, is found.



The height of these soldiers represents the average intelligence of white and colored enlisted men at Camp Lee.

This does not contradict the laws of inheritance; rather do just such cases prove the inheritance of brains. Every one has noticed cases in which children do not resemble either parent nearly so closely as they do one of their four grandparents. All the children of feebleminded parents are likewise deficient in brains to the extent of feeblemindedness. If only one parent is feebleminded about half of the children may be feebleminded while the other half seem to be fairly normal.

Although half of these children seem to be normal, in their bodies they carry hereditary determiners that may cause the appearance of a

feebleminded grandchild. The same is true of color-blindness. A woman who is normal in distinguishing colors may have three brothers, all of whom confuse red and green. Of the children of this woman the boys may be color-blind while her girls may be apparently normal. This type of inheritance is somewhat different from the exact type of inheritance in brains but it does show how apparently normal parents may transmit undesirable characteristics to their children. Brains are inherited.

Many delinquents are subnormal mentally, as this picture-gram indicates.

If education does not improve intelligence, what makes college men successful? Of the hundreds of thousands of men tested in the army during mobilization, the average score made in the test was 65. After the war the same test was given to a large number of students entering college for the first time. The average score made by these freshmen was 150. This does not mean that the college freshman has twice as much intelligence as the army man, since the army scale does not start with a zero score meaning zero intelligence. But this difference does mean that the ordinary college man is much better equipped with brains than the ordinary man on the streets.

Why Men Are Successful

Perhaps this is one reason why college men —some of them—are successful. It may also be the reason why some men who never saw a college are successful—they have the brains anyway.

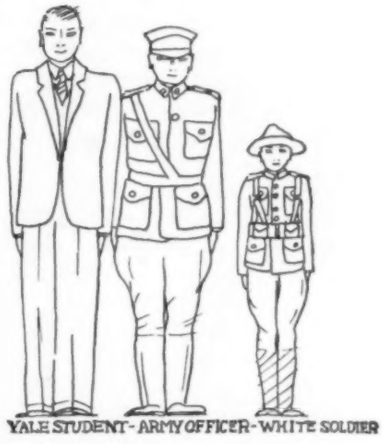
Picture the opening day of a grade school in which there are 100 children entering school for the first time. Eight years later let us follow the same pupils and see what they are doing. We shall find about a third of them entering high school. The other two-thirds have left school and gone into offices and industries; most of them will be found in industries. The thirty odd children that are entering high school are the ones that made the highest marks in the intelligence test given them eight years ago. The children that dropped out in the fifth grade were the ones that scored lowest—they are probably ordinary laborers now. Some others dropped out in the seventh grade. These were also low in the brain test; there are a few mechanics and semiskilled laborers among these.

It is interesting to follow through life these citizens in the making. Let us see what happens to these thirty odd who are lined up at the entrance of the high school. Four years hence we shall find less than half of them seated on the platform ready to receive their diplomas.

The original group has been weeded out until only fourteen familiar faces are seen. Some of these receive diplomas in the commercial and vocational courses. A few of the remaining fourteen receive diplomas of the regular course that prepares for college entrance. Let us look in our notebooks and notice the scores these made in the intelligence test twelve years before as they were entering school.

It is uncanny! All these fourteen are the ones who did best on the test as scarcely more than infants. Those who are receiving diplomas certifying that they have completed a commercial or a vocational course make lower scores than those preparing for college entrance.

The other side is equally interesting. We shall leave these embarrassed high school graduates on their commencement night and ferret out the children that left school in the fifth grade. One has attended night school and secured a responsible and remunerative position. He left school, so we find from our notebook, because his father died and he had to help support his mother and his smaller brothers.



Army officers excel enlisted men in intelligence.

But if we go to an employment agency at Columbus, Ohio, as did Professor Pintner of Ohio State University, we shall find among the men lined up for inspection some familiar faces. These are men without jobs; they were without jobs in a period during the war when men were at a premium and wages were high and appealing even for the most unskilled of labor. There are stalwart men in line, but not one of them succeeds in holding down a job for more than a month or so. They are the labor floaters, the drifters, the odd job men. We look into our notebook again and find that one out of about every four men in the line is feebleminded. The average of the group can do no more on an intelligence test than a normal boy 10½ years old.

It is not capital, unfair competition or labor discrimination that has made these men floaters, men without job or family. It is the same thing that has made some of the college men successful—brains, a matter of relativity.

Now let us go with our tests to the criminal courts, to the houses of infamy, to the penitentiaries and reformatories. Cincinnati is a good place to start, for the reason that the mental hygiene council of the Cincinnati Public Health Federation has made a special study of the intelligence of such folk.

At the juvenile court one out of three children charged with delinquency is subnormal mentally. One out of every four wayward girls is deficient in brains. Every other delinquent boy is much lower than normal in intelligence. Half of the unmarried mothers are distinctly subnormal. In prisons every fourth prisoner is decidedly subnormal, according to mental tests.

The rich get rich and the poor get laid off. The height of these men represents the average relativity of their brains.

The way in which marked differences in brains show up in what appears to be an equally gifted group of ordinary folk is uncanny.

What is one to do about it? Two actual cases will answer this better than any arguments.

Two girls were given intelligence tests to admit them to college. Erma ranked high. Louise ranked so low that the committee almost decided not to admit her to the college. At the close of the year's work it was found that Erma had been doing work so poor that she was scarcely more than passed. Louise used what intelligence she did have to the greatest advantage and ranked among the highest of the class in scholarship.

The point is obvious. How much brains one has is not the only important thing. How one uses his supply is almost as important. The person who, through good luck, has parents above the average in intelligence and inherits a good mentality has nothing to be elated over. He should rejoice but should not let his family heirlooms get the best of him. It is not to his credit that he has the brains.

His responsibility comes in using this gift of heredity to its fullest extent; not digging ditches when he could be making a physician's rounds or practicing law, not being an average student when he can lead the class, not being content with an average achievement when he has the makings of excellence within him. It lies within him to develop his potentialities.

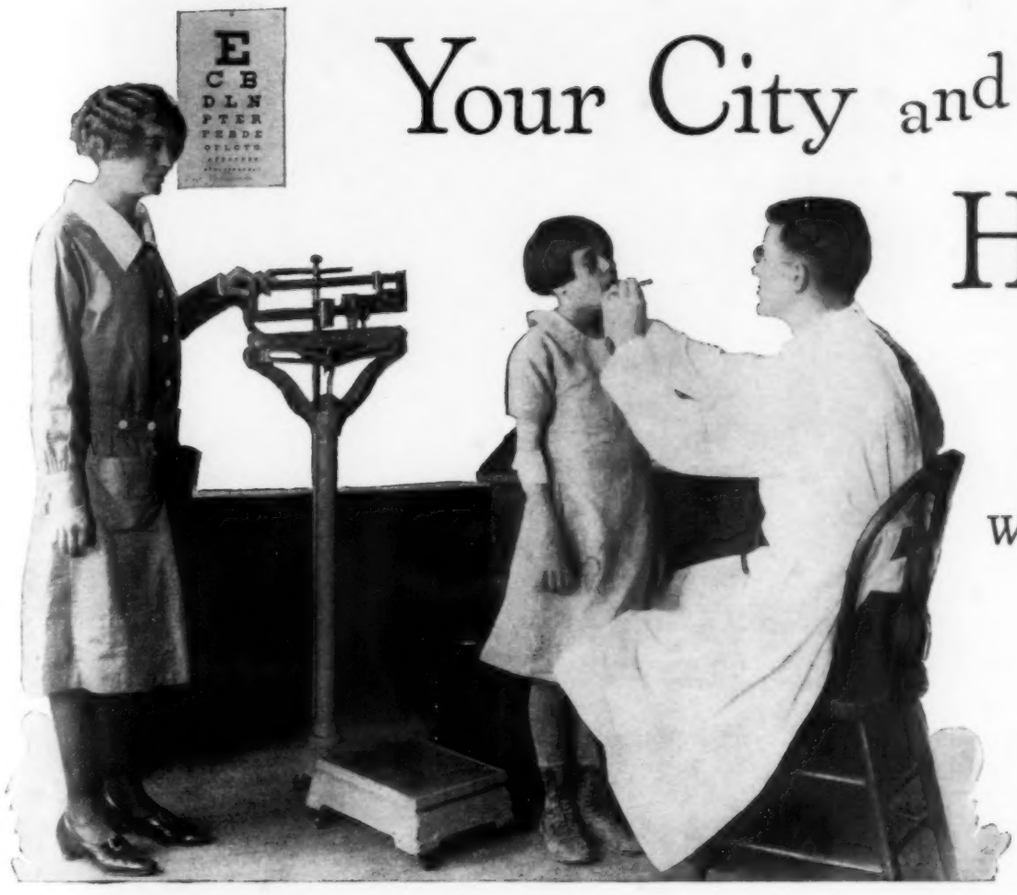
To be up and doing, to render a sagacious stewardship over his precious heritage of brains—that's the thing.

Michael Greenan

Your City and Your Health

By W. W. Bauer

WHAT IT OWES THE CHILD



Weights and measures, eye test charts, physical examination by the doctor, all are part of the modern school health program, which communities ought to provide.

THE health of the child is the principal concern of the modern mother. More than that, the health of the child is principally dependent on the mother, for on her falls the greatest share of responsibility for the child. Until recent years, mothers have been dependent for their knowledge of how to bring up a child and keep it healthy largely on their own mothers or other older women who have had experience with children. The advice obtained from these sources, while always conceived in the best of intentions, was frequently in error, sometimes dangerous and, even when good, was without basis of real knowledge.

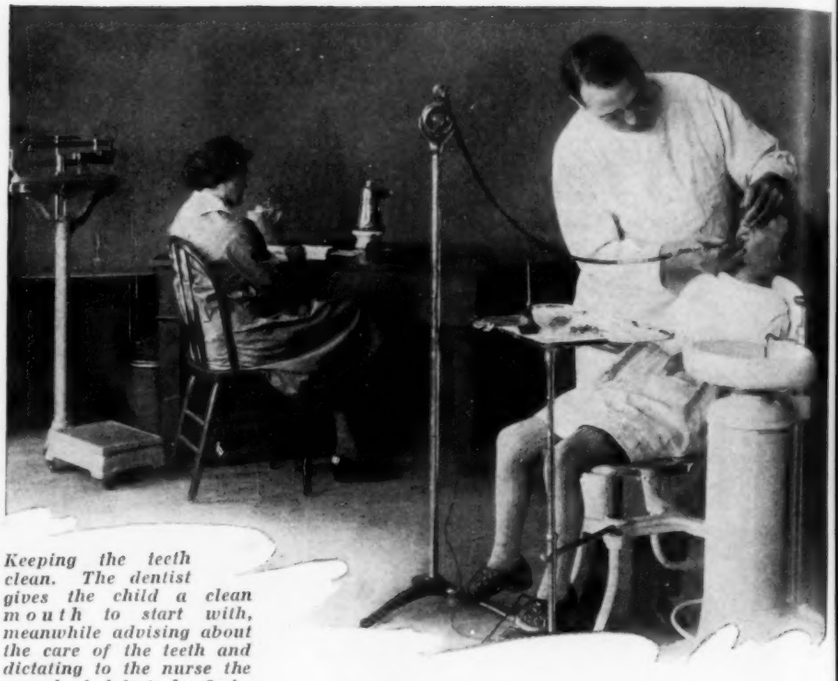
Times have changed. Today the mother has at her disposal many sources of authentic information. Every magazine devoted to the interests of women has its department dealing with health, particularly with the health of the child. Many general magazines publish health material from authoritative sources. Health departments of states, cities and counties are entering the field of health education through publicity. Insurance companies have recognized that health education saves lives and is reflected favorably in the financial balance sheets. Books that combine scientific accuracy with readability are numerous and may be found in any library. The family physician has cast aside his mask of mystery and is trying to make his patients realize the why of health as well as the how.

One of the sources of health service that the mother may utilize to good advantage if she understands it is her local health department. Cities are farther advanced than counties in health work, as a rule, but many excellent county health departments exist and rural mothers ought to demand the same service as city mothers. It is about the local health department and other local health services that I propose to write briefly, setting down a few of the things that people ought not to expect of them but do, and many that they should expect and too often do not.

Some definite child health measures may be enumerated that the mother may expect of her health department, if it is keeping up with progress. These measures are not set forth here as the opinion of one person but are based on what is known as the appraisal form for city health work. This is a schedule of standards derived from a study of almost 200 American cities and is offered as a tentative basis on which

to judge the completeness of city health organization.

There are a number of sources of community health service. First, there is the health department or board of health. Second, the public schools may undertake health work, other than the educational courses in hygiene. Third, groups of citizens may organize to perform certain health functions, appealing to the community for support. Cities differ widely in the distribution of public health functions among these governmental and private agencies. It does not matter much who does the work if it is well done, and it will be well done if the mothers of the community demand that it be.



Keeping the teeth clean. The dentist gives the child a clean mouth to start with, meanwhile advising about the care of the teeth and dictating to the nurse the record of defects he finds.

The beginning of life marks the first opportunity for health service to the new individual. This beginning is not the day of birth, but the day of conception or as soon thereafter as the fact of conception is established. Much advice has been published urging the expectant mother to consult her doctor early; much more has been published than has been acted on, as our death records continue to show. This early consultation with the doctor is a responsibility of the parents themselves unless they cannot afford to pay for such service, in which case the community becomes interested because of its concern for its future citizens.

It follows that the community should provide health centers for expectant mothers. Out of these centers should come nurses trained to advise the expectant mother, and these nurses may and should assist the doctor with his private maternity patients as well as with those of the health center. This service is not for the care of the sick, which is another matter, but for the guidance and advice of well women to keep them well and help them in giving birth to healthy babies.

The first thing that your community should do for your new-born child is to register his birth in such a way that you may readily prove his age, his citizenship, his parentage, or any other fact as to his identity, and that he may be able to prove any of these points in the future, no matter how distant from his birthplace he may be. This is usually done by the health department, though registration by the city or county clerk is not uncommon.

Every mother is confronted with the problem of bringing her baby safely through the first year. Though the loss of babies in this period has been greatly reduced and the myth of "the second summer" has been pretty effectually exploded, there still remains a greater loss of babies less than one year old than is necessary. Since this is not a discussion of child health as such but is rather an effort to show what your city ought to be doing about it, I shall say merely that there ought to be, in your community, health centers for the weighing and measuring of well babies and for their examination by a physician. In some places this service is free to all; in others moderate fees are charged those who can afford them. The point is that the service ought to be available.

This is one of the public health functions that is often sponsored by private organizations, though many public health departments are doing it well. Such health centers should have nurses to carry the message into the home, to demonstrate preparation of baby feeding formulas and to encourage breast feeding.

Infancy is usually considered as the first year, and from that time on to school age the child is called the runabout or preschool child. The division, of course, is purely artificial and the health problems are as continuous as the life of the child. For the preschool age there should be available extensions of the health service offered to infants, the principal difference being that as the child grows older the intervals between health examinations may be allowed to become greater.

The three preceding features of the community health service program may be and often are combined into one, an obvious advantage to the mother who has a preschool child and a baby and may be expecting another

A typical baby clinic, such as may now be seen in almost any community. Note the range in age of the children from infancy through the toddler stage. Expectant mothers are also made welcome at the clinic.

baby. Again let it be emphasized that it matters not who does this work, whether your local government or a committee of public-spirited citizens; your main interest is in whether it is well or badly done.

Most cities and some counties provide health maintenance facilities for well babies. This is due as much to the sentimental appeal of infancy as to any perception of the value of infant lives; in fact, probably more so. Before birth and between infancy and school age, little attention has been paid to child health in most communities, though there is now a belated realization of the importance of these periods in the development of the child.

It is in the school that most communities pay the greatest amount of attention to the health of their children. This is natural, since it is in the school that the children are grouped together so as to be most easily reached and that the effects of bad health are first observed. Most parents want their school to furnish proper health supervision to the children, whether it is a tax-supported public school or a privately financed school, either parochial or private. The question is, what constitutes a reasonable school health program? The appraisal form answers the question as follows:

School children should be weighed and measured regularly and the weight record sent home to parents every month, or if the child is underweight, every two weeks. Physical examinations should be part of the school health program, because few children reach school age without having developed some physical condition that is detrimental to their health and that can often be remedied if discovered. If your school is doing these physical examinations, you should be invited to attend and see for yourself. If you cannot be there, you should be visited by a public health nurse who will explain the whole procedure to you. Many parents do not understand this and do not welcome the nurse; some even shut the door in her face. This is unfortunate, for she personifies the health program of the school and she cannot succeed without your helpful understanding.

One would think that sanitation of school buildings could be taken for granted today. It can in most communities, as far as toilet and washing facilities are concerned. But how about temperature and ventilation? Each room ought to have a thermometer, and that isn't all. Somebody ought to look at it once in a while and keep the room temperature correct, at or about 68 F. There should also be enough adjustable seats in each room so that the big boys do not have to crowd themselves into a little seat and the little girls do not have to stretch to reach the floor from a big seat.

Should your school be teaching health? If you believe that it should, as most people do, what do you know about how much it does, and how well? About forty minutes a week devoted to health teaching is a reasonable expectation. From the third grade up this should be based on a standard textbook. This is in the hope that with adequate instruction as a part of general

education, our children will be wiser in health than we and better able to resist the false prophets whose voices are loud in the land. In order to give a practical aspect to this health teaching, the children should have projects, including inspection of places of health interest, such as water filtering plants and dairies, and supervision of ventilation of their schoolroom.

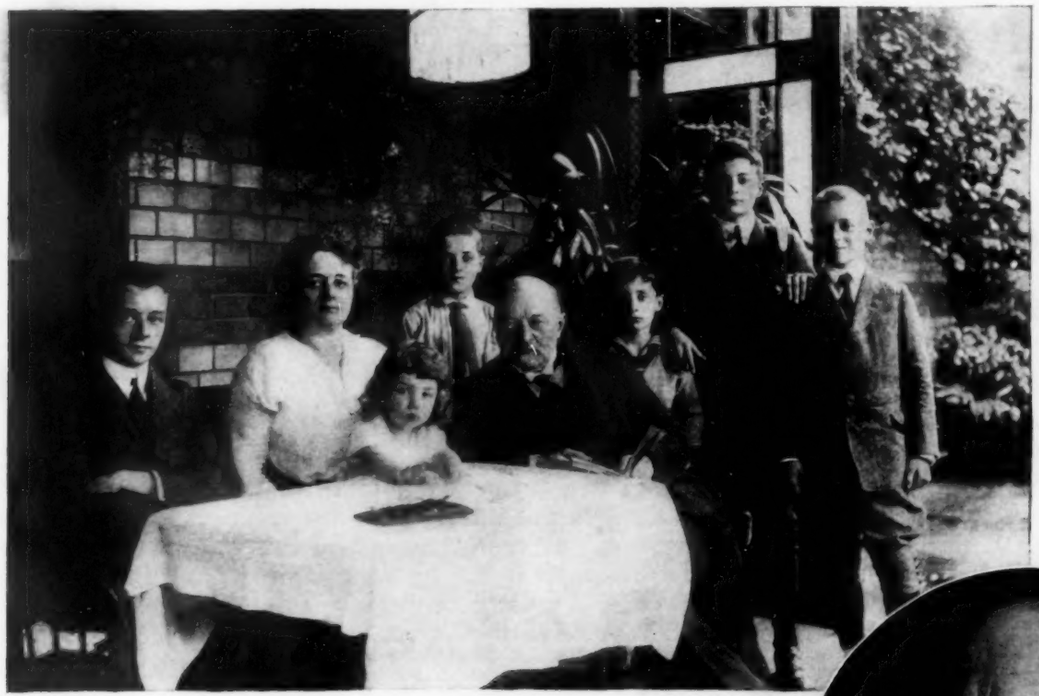
Playgrounds are not only a matter of safety for children, but they are recognized as contributory to character-building. They are an important part of the community health program. At least four acres of playground space in 25 per cent of elementary schools is the standard; you can easily check up on your city's provisions. The playgrounds should be used intelligently, so that they will not degenerate into hangouts for gangs; directors are needed.

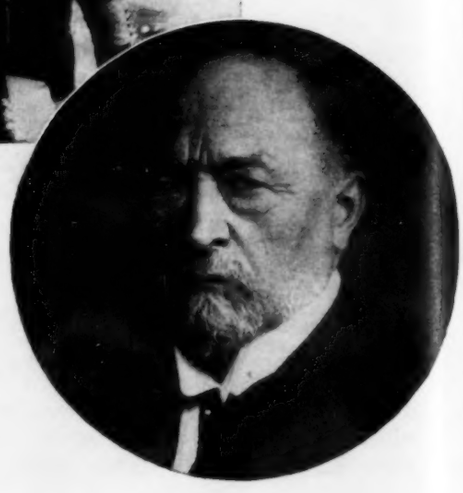
The health services mentioned here are those that you should expect from your city. If your county has organized health service, rural mothers may expect almost the same, allowing for the difficulties of reaching remote areas. If you are not getting them, it may be the fault of your health department or it may not. Whoever is immediately to blame for inadequacy of health facilities, the ultimate blame always rests in just one place—on the citizen himself. He gets only what he demands and is willing to pay for in public health service.

There will be some of these services that you, if you are in fairly good financial circumstances, will not and ought not to use. Most of them you will use and ought to use. Even those that you do not utilize should interest you, because the health of other children than your own may affect you and your children, not only today but for many years to come. If you don't believe that, just take one look at the charity hospitals and homes that dot the country.

Care of the health of our children is building for the future of our nation and is one of the ways in which we may be able to solve the vexatious problem of growing tax rates. It is one of the most important items in a well-rounded program of community health protection and promotion.

Other health services for which you are entitled to look to your community will be discussed in subsequent articles.





Emil von Behring with his family in Marburg-Lahn, in 1914; below, a close-up of the scientist.

In many countries on March 15 tribute was paid to the great German scientist, Emil von Behring, the occasion being the seventy-fifth anniversary of his birth. To Behring's researches in the field of serotherapy millions of children perhaps owe their lives. For it was Behring who discovered the specific treatment for diphtheria and this led to the development of a whole new science of toxins and antitoxins. Behring died in his sixty-third year but not until he had developed this reliable weapon against diphtheria and had made other important contributions to medical science.

Varicose Veins

By Norman J. Kilbourne

THERE is probably not a reader of HYGEIA who does not know what is meant by varicose veins, and some know for themselves how troublesome they may be. Such persons come to the doctor complaining usually of aching pain in the leg in the region of the enlarged veins and a feeling of general fatigue, made worse by standing. This is considered such a handicap that the United States immigration authorities exclude immigrants who have varicose veins.

It is a curious thing that persons with varicose veins nearly always have flat feet, although no reason can yet be given to explain this. Some of those who go to the shoe dealer or to the chiropodist, instead of the doctor, for their foot troubles, are really suffering from their varicose veins. Some types of chronic leg ulcers are due to hidden varicose veins, which can be felt but not seen. These ulcers disappear with the cure of the veins. Since the World War, discoveries by European workers have given impetus to new research in this field.

Causes of Varicose Veins

What causes varicose veins? At the present time there are fifteen theories to explain why they appear. No doubt heredity plays some part, for nearly two thirds of those with varicose veins can tell the doctor of parents or aunts or uncles or grandparents who had them. Just as some persons are born with poor material in the arteries, so that they harden, so others are born with poor material in their veins so that the walls give way and stretch.

But, even so, why should the vein walls give way in the legs and not in the arms? A reason is found in the erect posture of man. Bipeds other than man have their muscles high on their limbs with no important veins on the lower leg to enlarge. When the evolutionary ancestors of man developed, they were adapted to the four footed posture. As the animal rose to stand on his hind feet, there was a new increased pressure on the veins of his leg by his increased height. Physicists tell us that the pressure of a body of liquid is not dependent on the size but only on its height. If the distance from the heart to the feet in the erect posture is 50 inches, the pressure on the veins in the legs is as great in their narrow tubes as if the pressure were exerted by a vast body of water 50 inches high.

The ancestors of man lived largely in the trees and their veins were not designed to withstand the pressure of the erect posture.

But that these theories do not tell the whole story is proved by certain phenomena of pregnancy. Varicose veins often appear in the pregnant woman. It was formerly believed that this was due to pressure by the enlarged uterus on the veins after they entered the trunk, but it is now known that the varicose veins appear early in pregnancy before the uterus has grown large enough to reach a place where lie the veins that have come up from the leg. It seems probable that in many pregnancies some substance is formed by the fetus or by the placenta, an organ that connects the fetus to the uterus, that enters the blood and has a toxic action on the muscle tissue in the walls of the vein, paralyzing it and causing the veins to yield to pressure and to stretch.

The function of the veins of the legs is to carry blood from the legs up to the heart. To prevent its sinking downward in the opposite direction, there are normally valves in the veins. In many persons with varicose veins, these valves are entirely absent. In all persons with varicose veins, the blood flow in these veins, while they are standing, instead of being toward the heart, is in a reverse direction toward the feet. Accordingly, such diseased veins cause only pain and annoyance.

Cure of Varicose Veins

There are three ways of treating varicose veins. The older method is that of operation. In the operation, the veins are tied and cut out entirely, and the result is often very satisfactory to the patient.

The newer method of treatment, which has been developed mostly since the World War, consists in inserting into the vein by a hypodermic needle certain solutions that cause the vein to dry up and disappear. This method has won increasing favor because it does not require a patient to stop work and go to the hospital for an operation. American physicians were slow to adopt the new method until it had been proved to be trustworthy, but extended investigation over many thousands of cases has shown that in properly selected cases it is not only safe but brings about a high percentage of cures.

The third method of treatment includes what are called palliative measures. As a matter of fact, these measures may be better than the name would suggest. The most common palliative measure is the elastic bandage or rubber stocking. In persons of advanced years, it is better to be content with such relief than to employ either surgery or the injection treatment.

If the pregnant woman has developed varicose veins during pregnancy, she may be encouraged by knowing that after her baby is born the probability is that the varicose veins will disappear wholly or in part. She does not need to have either an operation or injections at this time. If the veins trouble her too much, she should temporarily use an elastic bandage, for the condition may disappear after childbirth.

WHY PLANT A GARDEN?

By L. E. Warren

PLANT a garden, because it will give you thrills throughout the whole season such as you are likely to get from no other avocation. To see the plants grow and unfold under the direction of your hand, to watch for the opening of the variant columbine blossoms, to have a new or odd-shaped flower every week for the wondering eyes of the children, to grow a finer rose than your neighbor, to increase the yield over last year in the 15-foot row of bush Limas, to carve a luscious strawberry shortcake on Labor Day from the product of your everbearers—these are joys indeed.

Plant a garden, because it will give you more healthful, exhilarating outdoor exercise and recreation than you can obtain in any other form for the same outlay of money. One has only to compare the costs of yachting, motoring, hunting or golfing to appreciate this. A few dollars invested in tools and a few more each year for seeds, fertilizers, and insecticides are the only expenses. No special equipment in clothing is necessary such as is required for many sports. On the contrary, the cast-off clothing of the office, store or schoolroom may be utilized in the garden.

Cuts Down Cost of Living

Plant a garden, because it is an economical practice. In a family with children an abundance of fresh vegetables is necessary to insure a supply of vitamin B to the growing child. The cost of these for a family of four is considerable in a year and with a small income every saving is important. Your garden may be made to supply a goodly portion of the family needs in this direction from May to December. The quantities of garden truck that may be raised in a season from a plot 30 by 40 feet are often surprising. By careful planning two or three crops may be obtained from the same piece of ground.

Plant a garden, because the quality of vegetables is much better when taken fresh from the garden than it is after the lapse of several days between harvesting and eating. No housewife need be reminded of the difference between green peas and sweet corn freshly plucked and the same from the huckster's wagon or the corner grocery.

Chemists have demonstrated that green peas and sweet corn begin to lose their sugar immediately after they are picked, the sugar mostly being changed into starch. The only way to conserve the sweetness and delectable flavor of these appetizing vegetables is to cook them within a few minutes after they have been taken from the plant. Only the proprietor of a garden can do this.

A Succession of Bloom

Plant a garden, because you may grace your table with flowers continuously from early spring until late autumn. Early crocuses open before the snow is entirely gone and hardy asters continue to bloom long after the fall frosts. Between these extremes a succession of bloom may be arranged by planting early, medium and late varieties of tulips, iris, peonies, sweet peas, roses, gladioli and zinnias—to mention only a few of the possibilities. Flowers are a never-ending source of delight and instruction to children. They like to assist in the planting and to ask questions. This will give you an opportunity to teach them lessons in nature study such as their school books cannot give.

Doubtless there are many other reasons why you should plant a garden, but they may perhaps be summed up in a single sentence: Plant a garden because you will like it.

TUBERCULOUS PHYSICIANS

and their Contributions

By J. A. Myers

WALTER RATHBUN and His Early Diagnosis Campaign

ON BOARD the U. S. S. *Leviathan*, 600 officers and men discharged from active duty were carefully examined for tuberculosis. The examiner, serving his country in the World War, was not an amateur in the diagnosis and treatment of tuberculosis. He had fought a battle with the disease himself and the enemy had been forced to retreat. He was a man known to tuberculosis workers everywhere, for he had published a number of articles on pulmonary tuberculosis.

This physician, Walter L. Rathbun, found that even the healthiest looking officers and men on board the *Leviathan* were not exempt from pulmonary tuberculosis. This was early diagnosis work of the highest class; not early from the standpoint of duration of lesion in every case but from the standpoint of occurrence of symptoms. It was also preventive work of the highest class, for it located the foci of infection among these men and perhaps in some cases the lesions were detected before the tissues had broken down and tubercle bacilli were being cast from their bodies.

These findings gave Dr. Rathbun a vision and all he lacked to realize this vision was an opportunity. That opportunity came in the summer of 1923, when he was appointed to the superintendency of the Newton Memorial Hospital at Cassadaga, Chautauqua County, New York. He went to that institution when it had been in operation for approximately two years. It had a bed capacity of eighty-two, but the census was only nineteen patients. It was necessary for Dr. Rathbun and his co-workers to awaken the people of the county to their responsibility in the welfare, present and future, of the tuberculous child as well as of the tuberculous adult.

When this was accomplished, Dr. Rathbun gained permission to examine large numbers of persons through clinics. Best of all was the cooperation secured through schools. The

On the porch of the children's building of the Newton Memorial Hospital.

clinics for adults and children were started in April, 1923, following the appointment of a county tuberculosis nurse. In the beginning, the school authorities were requested to send to the clinics children with any disability that might be due to tuberculosis; also those that were below par physically from any cause. These children were given a physical examination and certain ones were selected for x-ray examination at the hospital. The response to this appeal and the results were so satisfactory that Dr. Rathbun decided to enlarge the work during the following year.

Found Tuberculous Athletes

In 1924 the school authorities of Dunkirk permitted examination of the students of their high school. These students were taken as they came from the classrooms without regard to symptoms or disabilities. Those showing a positive reaction to tuberculosis included students who were apparently healthy—symptomless and above or up to weight for height and age. Some were athletes. They proved that weight for height and age was an unsatisfactory guide in the selection of students for examination. The only safe procedure was to examine all. The following year, 1925, the students of six rural high schools were examined and additional work was done at Dunkirk. In 1926 the county tuberculosis committee purchased a portable x-ray apparatus, and since then practically all x-ray examinations have been made in school buildings.

Up to the spring of 1926, selections for x-ray examination were based on discoveries made at the physical examination and also on the history of symptoms, contact and exposure. In May, 1926, an x-ray examination was made of the entire senior class of the Jamestown high school before a physical examination was made or a history taken. The percentage of positive cases was increased by this method, and since that time x-ray examination has become a routine procedure on all students showing a positive tuberculin reaction or on students whose parents have refused permission for the tuberculin test. Pupils showing any deviations from normal on the x-ray films are examined physically.

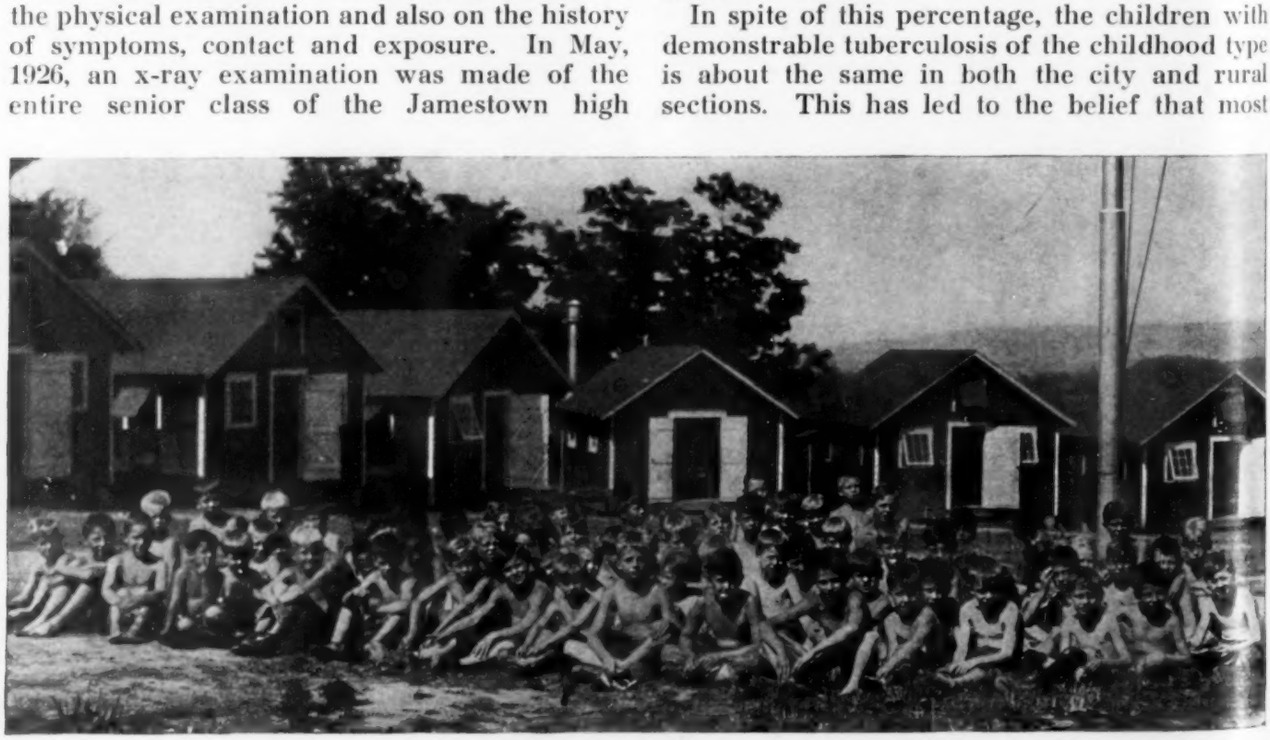
Already work has been done in all the high schools of the county with one exception. After the high school students were examined, work was begun on the pupils in the grades.

During the last three years, Dr. Rathbun's group has examined, including those reacting negatively to tuberculin, 21,065 children. At the present rate, it will not be long until the 27,000 school children of the county have been examined. The results of these examinations are of great interest. Between 3 and 4 per cent of the pupils were found to have juvenile tuberculosis. The adult type of pulmonary tuberculosis in children of the lower grades was relatively rare, but between 0.7 and 0.8 per cent of the high school students were found to have it.

City and County Children Similar

Apparently the children in rural schools have less casual contact with spreaders than those in the cities. In Jamestown—the largest city in Chautauqua County—the percentage of positive tuberculin reactions was 41, whereas in the small village of Frewsburg, located eight miles south of Jamestown, the percentage of positive reactions was 25.

In spite of this percentage, the children with demonstrable tuberculosis of the childhood type is about the same in both the city and rural sections. This has led to the belief that most



Some of those in attendance at the Chautauqua County children's health camp.

Administration building of the Chautauqua County children's health camp.

tuberculin reactions are caused by casual contacts with spreaders and that the children with definite signs of disease are exposed to continual doses of bacilli, presumably through contact with tuberculous persons in their homes. A few teachers were found to have pulmonary tuberculosis. Some infections may have occurred from this source.

Fifty per cent of the high school pupils with pulmonary tuberculosis showed evidences of healed tuberculosis of the childhood type. This indicates that children with such lesions are about thirty times more likely to develop tuberculosis before the age of 20 than children with normal chests. From these observations, Dr. Rathbun believes that one in eight of the children with tuberculosis of the childhood type will develop the adult form of the disease during their high school days and about one to 240 of the children with normal chests will develop it during the same age period.

In all probability the splendid accomplishments in Chautauqua County are largely due to Dr. Rathbun's attitude toward others. Although he has directed the work, he accepts little credit for it. He is particularly desirous that full credit be given the board of managers of the hospital and the county board of supervisors who, on account of their broad outlook, made the work possible; the hospital staff of workers, who have willingly taken on additional duties; the Chautauqua County Tuberculosis and Public Health Association for supplying funds and moral backing; the school authorities, local and state, whose cooperation has been invaluable; mother's clubs and various fraternal organizations; the parents, and the children, who have cheerfully submitted to examinations at all times.

Dr. Rathbun's work proves that tuberculosis often exists in the bodies of persons who are apparently healthy; that physical examination alone does not suffice in many cases even when tubercle bacilli are in the sputum; that the x-ray, while not infallible, is indispensable in the early diagnosis of tuberculosis of lungs and tracheobronchial lymph nodes; that the cutaneous tuberculin test is extremely important in selecting persons for examination; that weight according to height and age is not a safe basis on which to select children for tuberculosis examinations; that a complete examination will frequently reveal tuberculous lesions before there has been breaking down of the tissues; that the incidence of juvenile tuberculosis and of pulmonary tuberculosis among high school pupils is far greater than it was believed to be, and that the child with juvenile tuberculosis is in danger of developing the adult pulmonary type of disease before he is 20 if not properly treated and protected.

Dr. Rathbun has placed early diagnosis of tuberculosis on a higher plane than it has ever before occupied, and by so doing he has taken a great step in the prevention of this disease. The far reaching effects of his demonstration that a community can be awakened to its public health responsibilities can never be estimated.

BUTTER

By James A. Tobey

How butter was discovered.

AN ARYAN horseman galloped across an Asian plain one day thousands of years ago and discovered butter. This important event was one of those fortunate accidents that have contributed so much to the progress of man. It happened like this. When he started the horseman had with him a goatskin filled with sour milk. The journey was long and rough, the day moderately hot. When he reached his destination and dismounted, seeking to appease hunger and thirst, the Aryan was bewildered to find something in his goatskin that was unlike the milk he started with.

With some trepidation, for the acts of the gods were often mysterious in those days, he tasted the yellow mass. Then he tasted it again, for it was good. He told other herdsmen, who probably scoffed at him as a fool, as is customary when new benefits are announced, but eventually they too tried the product of the galloping churn. Soon the tribe was making butter, hanging up the goatskins filled with sour milk and beating them with sticks or shaking them until the golden mass appeared. That is the way butter is made to this day in some parts of the world.

Ever since that memorable occasion, butter has been one of the most important foods of man. The ancient Hindoos got the recipe from the Aryans and made butter 2,000 years before Christ, as did also the Hebrews and Egyptians of old. The Greeks had butter at least five centuries before Christ and it was popular in Roman times. Often butter was used externally as a medicine for man and beast. According to Hayward, historians have told of butter as a remedy for wounded elephants and Galen has mentioned it as the basis of the bath among ancient peoples in cold regions. Butter seems to have been popular as a cosmetic as well as a food.

In the early Christian era and well on into the middle ages, butter was reserved more or less as a food for the wealthy. In the rich Scandinavian dairy regions, it was produced in considerable quantities for general consumption and even for export. It is related that in the twelfth century German traders sent vessels to Norway to exchange wine and dried fish for butter, but a wise king who considered the products of the cow more beneficial to his people than the juice of the grape put a stop to the traffic. In the nineteenth century the Danes were preeminent as butter makers, though they often had to import dairymaids educated in the Netherlands.

The dash churn is now an antiquated piece of equipment.

It was a Swedish engineer, Gustav De Laval, who gave the greatest impetus to butter-making when in 1878 he perfected the centrifugal separator, a machine originally invented by a

German, Wilhelm Le Feldt. The De Laval separator was introduced into the United States in 1885, and when in 1890 Dr. S. M. Babcock invented a method for the determination of the butter fat in milk, a procedure now universally known as the Babcock test, the necessary equipment was at last available for tremendous progress in this important industry, a progress that soon occurred. In 1849 the per capita consumption of butter per year in this country was about 14 pounds, but in 1899 it was nearly 20 pounds. Today, when about one quarter of all the milk produced in the United States is used for making creamery butter, and another 10 per cent for farm butter, the annual per capita consumption is about 18 pounds.

The great value of butter as a nutriment lies in the fact that, except for cod liver oil and egg yolk, it is the most abundant source of vitamin A. This vitamin has been demonstrated to be not only essential to growth but also a contributor to the general health and well being of the individual. Its presence in the diet promotes a favorable resistance to disease, particularly the respiratory infections, and it has also been shown to exert a beneficial influence on fertility and reproduction. The vitamin may be stored in the body as an efficient reserve for future needs.

The cream separator was a great advance in the process of making butter.

Butter will obviously do all that vitamin A will do, for it is mostly the fat part of milk. The average composition of butter is 83 per cent fat, 13 per cent water, 1 per cent protein and 3 per cent salt, though the federal standard is a minimum of 80 per cent fat and in most states the maximum moisture content is set at 16 per cent. A pound of butter supplies 3,410 calories, sufficient for a laborer working twenty-four hours, though of course a workman may and does get his calories from many foods, and only a fraction of them from butter. It is one of the most digestible of foods, the coefficient of digestibility having been put at about 98 per cent. Because of these many virtues, scientific and medical authorities are agreed that no dietetic substitute is comparable to good butter.

In the modern manufacture of butter a number of steps are involved. These include the procuring of clean milk, the separation and preparation of the cream, the churning, the washing and working of the butter, and the packing of the finished product. In every step of the whole procedure scrupulous cleanliness with respect to utensils and methods is absolutely necessary and today is, fortunately, the general rule.

The first requisite of good butter is good milk. It must be clean and safe milk, free from dirt and low in bacteria, which means that it must have come from clean, healthy cattle and have been milked into sterile utensils by healthy persons using sanitary methods. In some places butter is made direct from whole milk, but it is better to separate the cream for the purpose. In either case the milk must be kept clean and free from disagreeable flavors and odors.

Cream is now usually separated by means of one of the mechanical separators, though the separation formerly was often accomplished by the old-fashioned and now obsolete gravity method, in which the milk was placed in a pan set in cold water. Invariably some of the cream failed to separate in this process, which was also much slower and frequently much less sanitary than in the case of the modern centrifugal separator. The separator must, of course, be carefully cleansed, scrubbed and sterilized after each use and it should be properly run. The present day tendency is to deliver cream to a creamery for separation by a power driven machine, though a considerable amount still undergoes hand separation on the farm.

Cream Must Sour before Churning

After separation the cream is stirred and cooled to a temperature of 60 F., or sometimes even lower, the constant up and down stirring helping to produce a uniform temperature throughout the cream mass. It is then allowed to stand in order to ripen. Properly soured cream is usually employed in butter making, though it is possible to manufacture butter from sweet cream. The growth of the lactic acid bacteria, which bring about the souring of the cream, imparts to the butter a distinctive flavor, popular among the users of this commodity. If the original milk was not clean, other forms of bacteria may grow and cause undesirable flavors. In many instances the

cream is aided in souring by the addition of a so-called "starter," a pure culture of lactic acid producing bacilli. In commercial butter making all cream is now pasteurized before it is churned.

When ripening has been properly completed, the next step is the churning. The churn is one of the most ancient of the implements used by man and has evolved from the goatskin of our Aryan ancestor to the great machines used in the modern creameries. A German author, Benno Martiny, wrote in 1895 a most interesting account of the early use and development of the churn, but unfortunately there is as yet no English translation of his engrossing treatise.

The churn is filled about two thirds full of strained cream at the proper temperature, which varies from 52 to 60 F. in the summer and from 58 to 62 F. in the winter. Butter has a high natural color in the spring and summer, but at other times of the year may be only faintly yellow, so that a few drops of annatto, a harmless coloring substance, the use of which is sanctioned by federal food authorities, is sometimes added to maintain uniform color throughout the year. This practice is, however, going out of style, as the public now accepts a medium colored butter at all times. Many of the commercial companies do not color their butter at any time nowadays.

Working the butter formerly was a part of every rural housewife's duty.

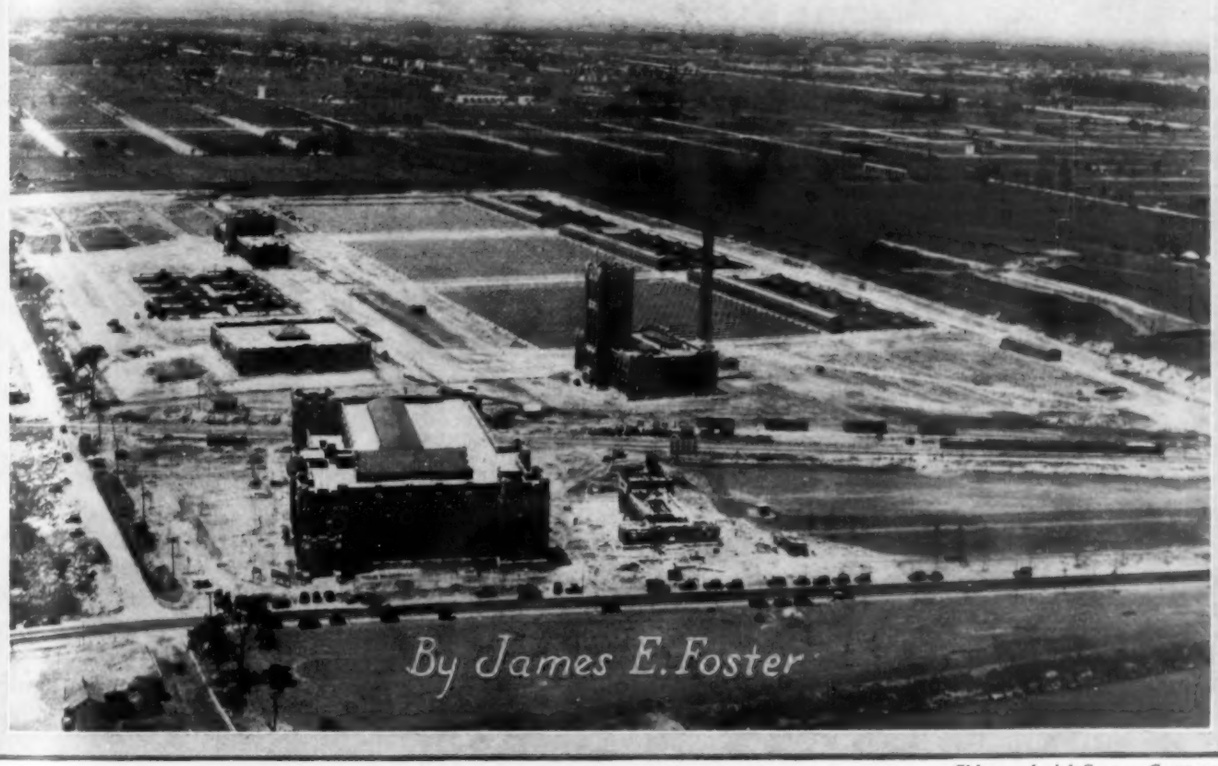
The ripened cream is next churned at the proper speed for half an hour or more. The completion of churning is made evident by a distinctly different noise in the churn, a sound which the expert readily senses, and also by the appearance of a thick mass on the glass of the churn. The time to stop is when the butter granules resemble grains of wheat.

The churning completed, the buttermilk is drawn off and the remaining butter is washed twice with pure water of about the same temperature as the buttermilk. After this water has been drained away, the butter, still in a granular condition, is removed from the churn, is weighed and the correct proportion of pure salt is added. The butter is then worked, or pressed into a solid mass by means of appropriate devices. This working must be carefully and exactly performed in order to secure the proper texture. All that now remains is to pack the butter, distribute it and get it into the hands of the consumer.

Now country folk are more likely to sell their cream and buy butter that has been commercially prepared and packed.

With the packing and distribution we are not concerned here, but something should be said about the eating. Because of its unusual nutritive value, butter should be generously used in every household. As a spread for bread it has no equal, at least from the standpoint of nutrition. Those who eat plenty of butter may indeed realize the words of the prophet Isaiah when he said (7:15), "Butter and honey shall he eat, that he may know to refuse the evil, and choose the good."

A History of Sewage Treatment



By James E. Foster

Chicago Aerial Survey Company

The north side sewage treatment plant of the sanitary district of Chicago. This is the largest activated sludge plant in the world. It was designed to treat the sewage of 1,340,000 persons.

PERHAPS one of the best illustrations of the progress made in the prevention of disease is the decreasing death rate from typhoid fever in large cities. In discussing this disease *The Journal* of the American Medical Association said:

"The total typhoid rate for seventy-four of the large cities for 1927 is under 2 per 100,000 population, the lowest point yet reached. The rates since 1910 show a steady decline from 20.58 to 1.96, broken only by the very slight rises (the greatest increase of rate being 0.34) in the years 1913, 1921 and 1925."

The advance made in fighting typhoid is typical of that for other water-borne diseases. Furthermore, practically all this progress has been brought about within the last hundred years. In fact, it was not until 1854 that the definite relation between "plagues" and impure water was established.

In the early fall of that year, the city of London was attacked by an epidemic of Asiatic cholera. Londoners were used to such catastrophes and they probably regarded this as just another irritating inconvenience. It was the fifth the city had suffered in less than twenty-five years.

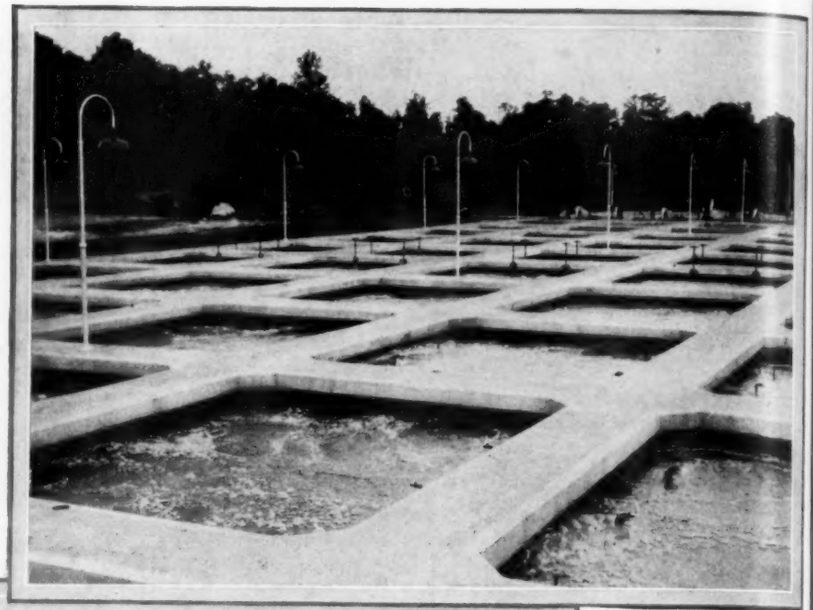
This one was slightly different from the others. In the first four epidemics the parish of St. James suffered but not as much as the rest of the city. In the epidemic of 1854, however, it was harder hit than any other section of London. During a period of seventeen weeks the cholera claimed 700 persons out of a population of approximately 35,000.

This fact led to a careful investigation of the district. Dr. John Snow, a member of the investigating committee, studied in detail eighty-nine deaths which occurred in a given week. He found that practically all these deaths took place in houses located near a pump on Broad Street. Only ten occurred in houses decidedly nearer another pump. In studying these ten cases, he found that in five of them the families always went to the Broad Street pump for their water and that three other deaths were of chil-

dren who went to school near this pump. In other words, out of eighty-nine persons who died from cholera, eighty-seven were definitely known to have drunk water from the Broad Street pump. He presented his findings to the board of guardians of St. James parish, and as a consequence the pump handle was removed. Immediately the death rate began to drop.

Another member of the investigating committee, the Rev. H. Whitehead, set out to determine how the well became infected. His investigation revealed that in the house nearest the well there were four fatal attacks of cholera and that there had been previous attacks of a disease similar to cholera there. A surveyor studied the well in its relation to the adjoining house and found that the main drain of the house emptied at a point within 2 feet 8 inches of the well lining and that the soil between the well and a cesspool near the house was in a highly saturated state. Further investigations showed that the dejecta of the persons sick with cholera were being thrown directly into this pool.

This was perhaps the first time in history that the source of an epidemic and the method by which it spread had been discovered. The work of Dr.



SPRINKLING FILTERS AT THE ELGIN, ILL., sewage treatment plant.

AERATION TANKS OF THE SUGAR CREEK sewage disposal plant, Charlotte, N. C. (above).

Section of the northeast sewage disposal plant, Philadelphia.

Snow and of Mr. Whitehead established the direct relation between drinking water and intestinal disease. It is true that the importance of pure water was recognized hundreds of years before the birth of Christ, but it remained for a doctor and a curate in London to establish scientifically that water may be a potent disease carrier.

Since then, definite advances have been made in fighting cholera and similar diseases by protecting our sources of drinking water from pollution. Cities have learned how to dispose of their wastes without contaminating their lakes and their streams, and many of them have built plants for rendering their sewage harmless.

The methods by which the wastes of civilization are disposed of were developed through the efforts of men in England, in France, in the United States and in Germany. No one man should be credited with originating all the advances in this field. Several investigators, however, stand out prominently in the history of sewage disposal, and it is due largely to their work that water-borne epidemics can today be successfully prevented.

The findings of Dr. Snow and Mr. Whitehead proved that human wastes can spread disease. They did not, however, suggest an immediate method of disposing of these wastes. Although a royal sewage commission was appointed in 1857, it was not until 1865 that it presented its final report. It recommended the spreading of sewage over the land as a constructive measure. This method, while primitive, is an efficient means of disposing of wastes. It has, however, a disadvantage in that the stench arising from the sewage makes the surrounding territories practically uninhabitable.

Biologic Principle in Filtration Discovered

During the years 1865 to 1870 progress was being made in the laboratory study of filtration. Dr. Alexander Mueller, a Berlin chemist, found in 1865 that sewage could be purified through digestion and mineralization by small animal and vegetable life. During this period Sir Edward Frankland conducted experiments with gravel filters and found them an effective means of purification. The process received comparatively little attention in Europe, although a filtration plant was successfully operated in Wales during the early seventies.

In 1871 two investigators in France, Schloesing and Muntz, proved that the filtration process is a biologic one. The following year Dr. Mueller patented a sewage treatment device based on a biologic process.

Popular interest in water supplies and methods for keeping them free from contamination was augmented in 1880 by the discovery of the typhoid bacillus. The following year a French engineer named Mouras invented an air-tight vault in which solid matters in sewage were dissolved. This vault was the forerunner of the septic tank, which is to this day the most effective device known for disposing of sewage in fairly small quantities. While Mouras' invention differed somewhat from the septic tank as it is used today, it embodied the essentials of its successor.

Incidentally, the biologic principle on which the septic tank operates was formulated by another Frenchman, Louis Pasteur, the great founder of bacteriology. Pasteur divided bacteria into three classes: obligatory aerobes, or those that require oxygen to live; obligatory anaerobes, or those that can survive only in the absence of oxygen; and facultative anaerobes, or those that can exist either with or without oxygen.

In the operation of a septic tank, the sewage is confined in an air-tight tank, in which the aerobes are destroyed and the solids are broken up. When the liquid leaves the tank, the anaerobes are exposed to the air and die. Since these are the only types of harmful bacteria in sewage, practical purification is obtained through use of the septic tank.

Massachusetts Leads Way

Perhaps the most important single contribution to the fight against water-borne diseases in the United States was made in 1888, when the Massachusetts legislature directed the state board of health to assume the "general oversight and care of all inland waters." The board was permitted to engage technicians and to "conduct experiments to determine the best practicable method of purification of drainage and sewage or disposal of the same."

The members of the board took this grant of power as a permit to conduct extensive researches in the field of sewage treatment, and that year they established the Lawrence Experiment Station. The station is still in operation and since the publication of its first report in 1890, it has always been the leading source of information in the field in which it specializes.

In June, 1889, the station put two gravel filters in operation. In reporting their experiments the engineers described the process as the "slow movement of the liquid in films over the surface of the stones in contact with air."

This description was to have an important effect on future developments. The contentions of Mueller, Schloesser and Muntz that the filtration process was a biologic one had been known to sanitary engineers. There was need, however, for a definite technic whereby this biologic principle might be applied. The Lawrence report described the essential feature of filtration. As a result, the "trickling filter" treatment process was developed. This is used today in

such cities as Atlanta, Ga.; Pontiac, Mich.; Rochester, N. Y., and Champaign-Urbana, Ill.

The trickling filter process is perhaps the most practical one in use when the volume of sewage is not excessive. It is also employed in large cities. Atlanta, for example, has three trickling filter plants. In these plants, most of the solid matter is removed by screens. The liquid is then transferred to settling tanks in which the remaining solid matter is removed and the aerobes are destroyed. It is then sprinkled over beds of gravel, where the remaining impurities are removed.

This method of treatment was (with the exception of dilution) the only one recognized as a practical means of purification for several years. In 1912, however, Dr. Gilbert J. Fowler of Manchester visited the Lawrence Experimental Station, and there he witnessed an experiment in which air was blown through sewage in bottles. The insides of the bottles had become coated with green algal growths. The tests showed that the purifying effects of the air were greater in the presence of these growths.

The "Activated Sludge" Process

Dr. Fowler reported his observation to two English investigators, Arden and Lockett, who took his findings as the basis for further experiments. They passed air through sewage until the liquid was completely cleared. This process took about five weeks. The clear liquid was then decanted, fresh sewage was added to the sludge that had settled out, and aeration was recommenced. The investigators repeated the process several times and found that as the sludge increased the time required for purification decreased.

Their findings are embodied in the "activated sludge" process of treatment. In this process the sewage, which is mixed with the sludge deposits of wastes that have been treated, is aerated. This method is now used in Chicago, Baltimore, Milwaukee, Indianapolis and other large cities. The largest now in operation, the north side plant of Chicago, treats the sewage of 800,000 people.

Small Towns Join in Fight

Most large cities either have sewage treatment plants in operation or are building them. And —in the United States, at least—the small town is also joining in the fight for sanitation. During 1927, fifty-six cities in this country awarded contracts for sewage treatment plants. Twenty-eight had populations of 4,000 or under, and thirty-four had populations of not more than 10,000.

The development of sanitary engineering is the result of cooperation between the bacteriologist and the engineer. It was Pasteur, the bacteriologist, whose classification of bacteria was perhaps the clue that made possible the discovery of the septic treatment of sewage and whose work furnished the impetus for modern devices in which purification is brought about through biologic processes. It was the engineer who perfected the technic by which the wastes of mankind might be disposed of in a harmless way. They have made it possible for large populations to dwell in the world without fear of the water-borne epidemics that were wholesale destroyers of life less than a century ago.

SCHEDULED for MAY

JUST a peep at the HYGEIA schedule for May will be permitted. Listed are the following articles by competent writers:

THE NEWER VEGETABLES, AND HOW TO PREPARE THEM
By Lulu G. Graves

SELLING BLOOD FOR TRANSFUSION
By Herbert Harlan

YOU AND I AND THE X-RAY
By Charles W. Schwartz, M.D.

The Richardson series on the runabout child, the Harvey series on the anatomy of the human body, the Bauer series on what your city or county owes you in the way of health service, will be continued, along with numerous special articles by new and also by familiar HYGEIA contributors.

SIMPLE LESSONS *in* *Human Anatomy*

By B. C. H. Harvey

LESSON IV.

The Special Muscles

THE central nervous system calls billions of muscle fibers into harmonious action and into the harmonious sequence of progressive actions that make the rhythm and beauty of motion. Since it takes about forty stimuli per second to each fiber to keep it in continuous action, the conducting nervous system has no light task.

The body of the muscle does the work. In it are assembled the mass of long striped fibers that contract individually, each when it gets its call from the brain or spinal cord. These masses make up the middle part of each muscle. The ends are tendons. Some tendons are even as long as 12 inches, as, for example, the finger tendons (fig. 18 and the "Muscle Man" in the March number). In one of these muscles the belly, or body, situated in the forearm is 8 inches long and the tendon at the upper or proximal end is 2 inches long. Such a finger tendon (fig. 19) is made of thousands of white fibers of connective tissue, all parallel and arranged in bundles. A few elastic fibers are among them. The constructive cells, fibroblasts, which have been concerned in their formation, remain attached for their up-keep and repair. The long parallel bundles are slightly wavy; this gives them the bluish iridescence characteristic of tendons. Each tendon fiber is attached at one end to a muscle fiber. The union is so close and firm that all the force of the muscle fiber cannot break it. Too sudden or vigorous a pull will tear the muscle fiber in two but will leave the end still attached to the tendon fiber. This injury happens frequently in athletic activities and is known as Charley horse.

Around the tendon is a delicate sheath of connective tissue, continuous with the similar sheath that surrounds and permeates the mass of muscle fibers in the belly of the muscle (fig. 12). It carries blood vessels for nourishment, lymphatic vessels for carrying off débris of injured or dead tissues, and nerves. Some muscle fibers in the center of the muscle belly never reach a tendon fiber. Their pull is made only on the connective tissue sheath, which, being continuous throughout muscle and tendon, transmits it. These connective tissue sheaths of muscle are made of white fibers and elastic fibers. The white fibers run crosswise round the muscle belly preventing excessive expansion (a muscle expands in the middle in proportion to its contraction in length). They run lengthwise at the ends helping to transmit the pull to the tendon. The elastic fibers restore the parts to the position of rest after the contraction is finished.

The length and position of tendons and the size and position of muscle bellies are revelations of beauty and perfection in mechanical adjustment. Where muscles are overlaid by other muscles so that the increase in thickness that accompanies contraction lengthwise would be hindered, as where the breast muscles cover over the upper end of the biceps (fig. 20), the muscle is tendinous. Opposite the joints, where thick masses of muscle fibers would interfere with bending, the muscles are tendinous. Where a muscle is in two parts that extend in different directions, turning round some pulley-like structure (fig. 21), the muscle is tendinous.

The muscle masses are disposed about the bones so as to produce limbs of beautiful and practical shape and size. If some such muscle masses are necessarily far from the parts on which they

Fig. 18.—Muscles, tendons and ligaments of the forearm, hand and fingers from the front. (From Tandler.)

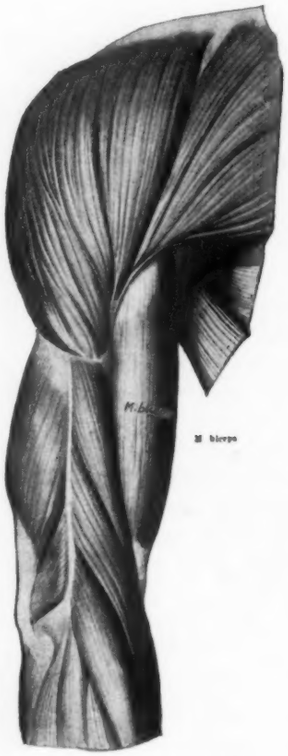


Fig. 20.—The biceps muscle of the right arm. (From Tandler.)

Fig. 21.—Muscles of the neck, showing the tendon at the angle in the omohyoid muscle. (From Toldt.)

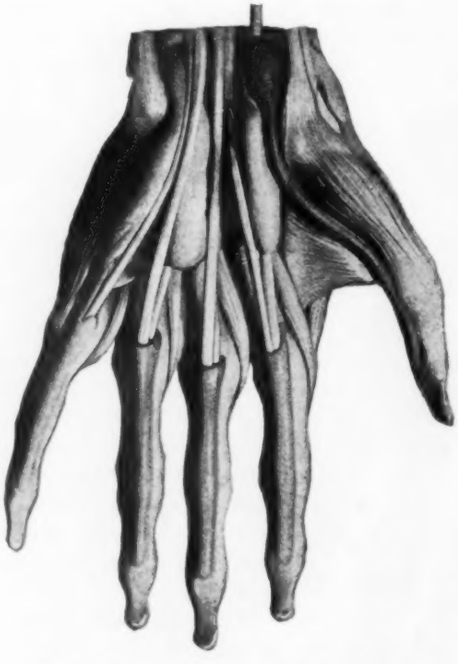


Fig. 23.—Bursae around the tendons in the fingers and at the wrist. (From Tandler.)

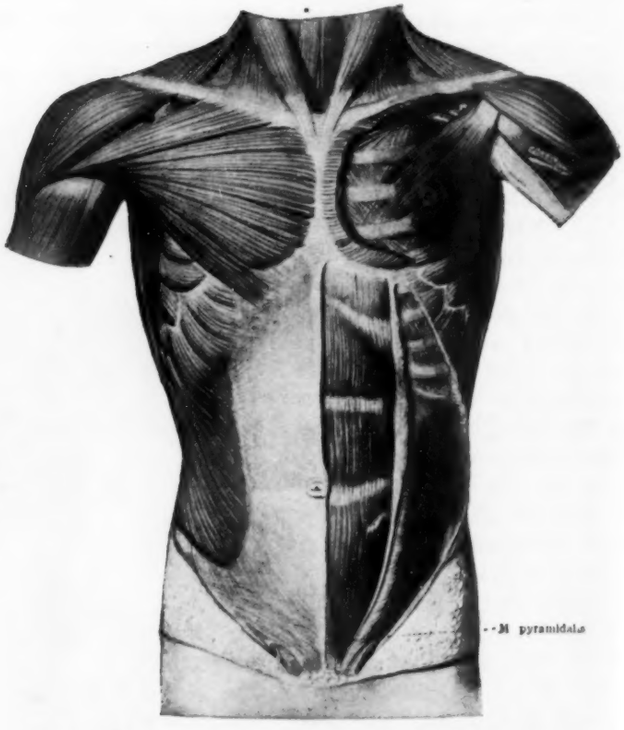


Fig. 24.—Muscles of the abdomen. The outer layer is shown on the right, the middle layer on the left. The deep layer is not shown. (From Tandler.)

act, then long tendons connect them with it. To prevent them as they pass over a joint from pulling away from the joint in bending movements or from sliding sideways on it, these tendons are held down by ligaments opposite the joints and slide in grooves on the bones. Some muscles act on parts separated from them by two or more joints. These have very long tendons; the finger muscles in the forearm, for example, act on the ends of the fingers and pass over six joints. Their long tendons are held down by many heavy ligaments in front of the wrist and fingers. The ligaments at the wrist are shown in figure 18. Persons who do heavy work with their hands sometimes supplement the action of these ligaments by wearing wrist straps.

Fig. 19.—Junction of muscle (above) and tendon (below). Magnified 200 times. (From Szymonowicz.)

On the palmar side of the fingers the ligaments are connected to form a continuous ligamentous tunnel through which the tendons glide (fig. 18). The way in which these ligaments work is clearly shown in figure 22. This figure is copied from the earliest good book on anatomy. It was published by Vesalius in 1543, when the young Belgian anatomist was only 28. It is the foundation of modern medicine. Many good people criticized Vesalius severely for studying the human body so carefully, and a year or two later he gave up the study in discouragement. This was called by Sir William Osler the great tragedy of anatomy, for the progress of medicine was set back perhaps 100 years by it. Edith Wharton's poem on "Vesalius," depicting this tragedy, is one of the great poems in American literature.

Under these ligaments friction between the ligament and the tendon pulling against it is prevented by the presence of bursae. These are shown in a distended condition in figure 23. They are like long closed sacks containing a little lubricating fluid and are wrapped lengthwise round the tendon under or inside the ligament. The edges of the sack almost meet on the side next the bone but leave a little cleft by which vessels and nerves run from the bone out to the tendon.

It is apparent from the figure that these sheaths are longer on the tendons for the freely moving thumb and little finger, shorter on the tendons to the three middle fingers, which have a smaller range of movement. That is why finger wounds penetrating the tough ligamentous tunnel and permitting the entrance of infection are more serious on the thumb and little finger than on the other fingers; in them the infection may extend to the wrist. Tendons of finger muscles and most others are attached to bone; they are not only attached to the surface but they are also anchored in its internal structure. The attachment is so strong that sometimes they pull off little pieces of bone.

Some tendons are not attached to bone. In the face they are inserted at one end into the skin and produce the skin movements that mark the play of facial expression. In the tongue they are attached to the connective tissue surrounding it and permeating it; they produce the movements of the tongue, making it long or short, curling it up or turning it to one side. On the front of the abdomen tendons are broad and flat like membranes. Their parallel fibers simply interweave with those of other membranous tendons whose fibers run in other directions (fig. 24). Contraction of such muscles produces compression of the abdomen.

All muscles have tendons of some shape, though in a few, as in the muscles between the ribs, they are so short that they are not apparent. It is clear that tendons often concentrate the action of a large muscle mass on a small spot, the point of their attachment. But a look at the finger muscles will show that they sometimes dissipate the action of a muscle mass, for these muscles give off several tendons that run to different fingers.

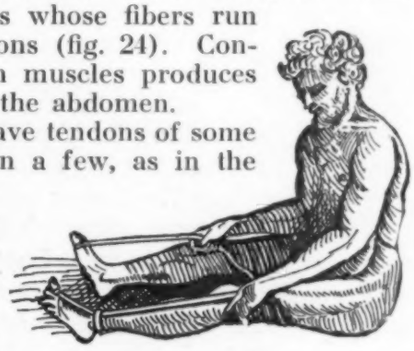


Fig. 22.—Figure of Vesalius, 1543 A. D., showing the action of ligaments at the ankle joints on tendons.

The anatomy lesson on the special muscles will be continued in the next issue.

HYGEIA
THE HEALTH MAGAZINE
Published by the American Medical Association
535 North Dearborn Street, Chicago

Plain Facts about Health and Disease

ANIMAL EXPERIMENTATION

"AN ANTIVIVISECTIONIST," said George Jean Nathan, "is a woman who strains at a guinea-pig and swallows a baby." At a period when the whole world is turning to science, when intelligent human beings are discarding pseudosentiment for fact, the followers of the cult of animalism oppose progress if it involves in any way what they conceive to be abuse of the lower animals for purpose of study. Without the aid of experimentation on animals, Pasteur could not have founded the science of bacteriology. Such diseases as hydrophobia, yellow fever, plague, scarlet fever, diphtheria and diabetes would not have come under the control of scientific medicine and the life expectancy of the average man would be at least twenty years less than what it is.

In the preparation of diphtheria antitoxin, scientific medicine requires the use of guinea-pigs and horses. The horses used for such purposes have far more pleasant lives than those exhibited at horse shows. They do not work, they are kept clean, they play in the open air except in bad weather, they are well fed and given the best of attention. I have seen the serum withdrawn and I have never seen a horse make any more visible sign of protest than is made by the average man when he sticks his finger on a pin in the back of his wife's dress. I have seen guinea-pigs by the thousands utilized for this work. If I am any judge of guinea-pigs' emotions, they do not suffer unduly in this process. I have never seen a guinea-pig suffer as much as an hysterical antivivisectionist suffers at a dog and pony show or circus.

Scientific medicine depends on animal experimentation for the study and control of every disease in which bacteria are concerned. It depends on the use of animals for the standardization of the most important drugs. Shall the poisonous doses of potent drugs be learned by tests made on the white rat, on frogs, on the guinea-pig, or shall they be tested on man?

The lower animals have benefited as much as man himself through the progress made by animal experimentation. Hog cholera serum, the tuberculin test for cattle, the control of foot and mouth disease, distemper in dogs, hydrophobia, and chicken plague are just a few of the developments by which animals have been and are being freed from disease by the aid of animal experimentation. No one seems to worry about the killing of hundreds of thousands of stray dogs and cats in our large cities. A single pair of rats, if permitted to breed unchecked, would produce within three years more than a billion billions of progeny, and guinea-pigs breed at least as fast as rats. Are not the actions of science as kind as those of fate?

Since 1875, when scientific experimentation first began to attract public notice, sentimentalists have agitated against the use of animals for such purposes. Little groups of illogical thinkers continue to agitate such questions before the legislators of our country. Worst of all, a few shortsighted possessors of great wealth, animated by no one knows what reasons, have left funds in perpetuity for the uses of promotion of such organizations. Where there are funds, there are jobs for secretaries whose duty it is to promote regardless of the advances of progress. Year by year the same little lobbies pop up before the legislators. The same windy breed of legislators—the sob-sisters of the legislative halls—produce the same bills and defend them with floods of crocodile tears. The same cohorts of university presidents, professors, physicians and representatives of industries vitally affected must be mobilized to present the facts in order to overcome this deluge of misguided sentiment.

In Illinois, Senator Courtney proposes to introduce a bill against experimentation particularly with the dog. Every one who has investigated the subject knows that such legislation is planned merely as an entry wedge against all animal experimentation. One may well wonder how much study the supporters of Senator Courtney, the distinguished terpsichorean, and the other sentimentalists, have actually given to scientific medicine and whether or not they have ever seen at first hand the care given to animals in the laboratory. Do they know the rigid rules by which all animal experimentation is controlled? Such knowledge, instead of the ignorance displayed by most antivivisectionists, would change the point of view of any one but an illogical or unreasoning cultist.

CALM PEOPLE, THE CHINESE!

THE average American is under the distinct impression that the Chinese are an exceedingly calm and self-restrained people. The portraits in the tales that appear in the *Saturday Evening Post* reveal the Chinese as sedate gentlemen who are never disturbed by tong wars, drawing the wrong card at poker, getting a bad break in the mah-jong game (if the Chinese still play it), or by flurries in something or other, common or preferred.

It occurred to Dr. Andrew H. Woods of the department of neurology in the Peking Union Medical College to make a scientific study of the records of 4,000 cases of nervous disease in that service. An examination of the 300 brains of Chinese available through postmortem examinations failed to show any significant variations from European brains in structure. Studies of the reactions of the Chinese in the department of physiology failed to indicate any variations in the physiology of the nervous systems of Chinese from those of Americans. Their temperatures, pulse and respiration were the same as those of peoples in the western hemisphere. As had been noted by other observers, their average blood pressures and average basal metabolic rates were lower than in Europeans and Americans, but the difference for each average was small and well within the limits of variations observed among individuals in other races.

When it came to psychoneuroses, however, Chinese did not come to clinics with the sexual conflicts that brought foreign white patients. Concerning this factor Dr. Woods says:

"The sexual life of the Chinese is different from ours in its superficial exhibitions, but obviously has under it the same deep instinctive and emotional forces. They are driven by strong cravings, and these are inhibited by equally vigorous regulative and protective devices on both the instinctive and the intellectual levels. Hence, there are repressions, out of which conflicts arise, causing stormy emotional disturbances. They are spared, however, much of the mysteriousness and the sense of intrinsic wrongness . . . that complicate the sexual struggles of Jewish and Christian peoples."

Dr. Woods finds that the Chinese have jealousy as fierce as that of other peoples, and that moral conflicts induce disordered emotional conditions in the Chinese when appetites and higher sensibilities clash. Thus, in spite of his apparent external calm, the Chinese suffers stormy internal conflicts. He is especially sensitive to public opinion. Intolerable conditions in domestic life will lead with him as with others to sloughs of despond and from such depressions come the disturbances that seem to constitute such a notable feature of modern American life.

Problems of mental adjustment are today among the most significant in attempts to find happiness, contentment and longevity. Much depends on the philosophy of life that one adopts and on one's ability to maintain such a philosophy without an inner stress perhaps more serious than external manifestations such as bursts of rage, shrieking or other common devices for the release of pent-up emotions. The Chinese is calm because he has cultivated repressions. His nervous disturbances in the nature of hysteria, neurasthenia and similar disorders seem to be no whit different from those of the more effervescent western types.

TEACHERS AND PHYSICIANS COOPERATING

THE yearly meeting of the joint committee of the National Education Association and the American Medical Association on Health Problems in Education was held in Cleveland, February 26, in connection with the annual session of the Department of Superintendence of the N. E. A.

This joint committee has been actively engaged for seventeen years in a study of the health situation in the schools of the United States. It began in the visit of a special committee from the American Medical Association, which met in Los Angeles in 1911, to the National Education Association meeting in San Francisco the following week. This committee

was instructed to convey greetings to the great body of educators and to urge on them the need of greater attention to the health situation in the public schools. The result was a hearty response from the educational group and the appointment of a joint committee composed of ten recognized leaders in the educational world and of four physicians representing the American Medical Association.

Dr. Thomas D. Wood of the Department of Health Education, Teachers College, Columbia University, was elected chairman, and to his wise and efficient direction of its work are largely due the noteworthy results of the subsequent activities of the committee. Previous to 1913, few subjects in the school curriculum were taught with less enthusiasm or with more indifferent results than hygiene, physiology and allied subjects. In the subsequent sixteen years the change that has come over the teaching world has been little short of revolutionary. Today at almost any meeting of educators—teachers, superintendents, supervisors and others—one is certain to hear emphasized the thought that health is the fundamental objective in any educational program. It is set down as the first and most important item in the scheme of education of the National Education Association.

This remarkable change in the attitude toward school health and all that is related to it was stimulated by the revelations of the World War as to the physical defects of a large proportion of young men called into the service, but it is safe to say that the work of the joint committee, with its several reports which have been widely circulated and discussed, has been an outstanding factor. A leading official of the National Education Association, who has seen it grow from a membership of less than 10,000 to one of nearly 200,000 teachers, has expressed the opinion that no accomplishment of the N. E. A. since its organization has been of greater value and importance than the work of the joint committee. The first report on the "Minimum Health Requirements for Rural Schools," of which 1,000,000 copies were distributed, had much to do with securing the enactment of legislation in most states, which makes it impossible for a school board to erect a schoolhouse without the approval of the plans and the location by a competent state official or board.

The second report, "Health Essentials for Rural School Children," was based on investigations that attracted nation-wide attention and comment. These observations showed that physical defects which hamper school children in their work are from one and one-half to ten times as frequent among country school children as among those in city schools. The robust, rosy cheeked product of the "little red school house" of earlier years no longer surpasses his city cousin in health.

A more elaborate report entitled "Health Education," the work of twenty-seven experts in the several fields of health and education, was officially adopted by the National Education Association in 1925. It is believed by many educators to be the most authoritative and useful statement yet published of the fundamentals that are the ground work of any school health program.

Other reports of the joint committee have dealt with such important matters as "Daylight in the Schoolroom," "Ventilation of the Schoolroom," "Health Improvement in Rural Schools," "Health Service in City Schools," "Conserving the Sight of School Children" (contributed by the National Society for the Prevention of Blindness), and "The Deafened School Child" prepared with the cooperation of the American Federation of Organizations for the Hard of Hearing and also the New York League for the Hard of Hearing.

There is a peculiar significance and usefulness in this cordial sustained cooperation of two great national organizations in this study and effort to secure improvement in the sanitary environment and physical condition of school children, and in better education about health and training in health habits. The movement has accomplished much, and promises to do much more for the health betterment of our children.

Barby's Visit

A Story for Nine-Year-Olds

Barby

By

Harriott B. Churchill

Josephine

WHEN Barby first went to visit Aunt Helen and Uncle Tom she was a pale, thin little girl who looked much younger than her nine years. Her yellow hair curled around a little white face, and her blue eyes looked almost as large as teacups.

Aunt Helen wondered why her little niece was not rosy and sturdy as all nine-year-olders ought to be, and Uncle Tom said she'd have to get fat while she stayed with them or her mother would think they had not fed her enough.

Aunt Helen cooked a particularly nice supper that first evening. She had broiled lamb chops, baked potatoes with butter-shiny skins, plenty of spinach, and whole wheat bread. By Aunt Helen's place there was a large pitcher full of creamy milk. But Barby said, "No, thank you," when Uncle Tom started to put spinach on her plate, and "Just a little potato," and "I don't drink milk, Aunt Helen." She crumbled up her bread but ate only a little of it. Uncle Tom looked across the table at Aunt Helen and raised his eyebrows. Aunt Helen looked across the table at Uncle Tom and smiled. They knew now why their little niece was not round and rosy.

The next day after lunch Aunt Helen suggested that Barby take a short rest. The little girl seemed quite surprised.

"But I never take a rest, Aunt Helen," she protested. "I'm too big."

"All right," Aunt Helen agreed. She smiled with her eyes even though her lips were quite serious. "When is Josephine coming?" asked Barby. She thought her cousin Josephine was the prettiest and nicest girl she knew; and the biggest event in her life was when Josephine came all the way from Boston to see her.

"I don't know exactly," said Aunt Helen, "but I'm going to write to her now and ask her to come this week-end."

Saturday just before lunch, the front door burst open and a tall, rosy girl ran into the house. Uncle Tom, Aunt Helen and Barby all jumped up to hug and kiss her. It was Josephine home from college.

Finally they settled down to eat lunch and talk.

"Well, well," laughed Josephine, "if I don't see my old friend tomato salad."

"Do you like salad?" asked Barby.

"Of course. Don't you?"

"No."

"I think I made the basketball team on salad and spinach," said Josephine.

"Oh, do you play basketball at college?"

"Yes, on the first team. It's lots of fun, but it's hard work, too."

"Can I play basketball when I go to college?" asked Barby, so excited that she ate a piece of whole wheat bread by mistake.

"If you'll get a little fatter, you can play before then. In some schools the girls begin to play in the seventh and eighth grades."

"But why must I get fatter?"

"Another glass of that delicious milk, Mummy, please," begged Josephine. "Well, you see, basketball is a very fast game, and you have to be able to run around and not get tired for a long time. When you have the right amount of the right kind of weight, it's just like having the right amount of the right kind of gasoline in an engine. You have pep enough to get into the fight and stay there. Your body is an engine, you know, and you must have gasoline for it."

The front door burst open and a tall, rosy girl ran into the house. It was Josephine home from college.

"Oh," said Barby, "but I don't like lettuce."

"Did you ever play you were a rabbit? If you imagine you're a rabbit hard enough, you'll like lettuce," said Josephine, "because rabbits just love it. Try it sometime."

"I'll try now," said Barby, "and I'll wiggle my nose the way a rabbit does."

She did. Before long she had finished two pieces of lettuce and decided that maybe it was not as bad as she had thought.

Later in the afternoon Barby hunted for Josephine, who had disappeared. It was a long time before she found her, but at last she went upstairs to her cousin's room. There she found Josephine lying flat on the floor without any pillow under her head and all rolled up in an Indian blanket.

"Why, Josephine Crosby, whatever are you doing?" asked Barby much astonished.

"Hush," whispered Josephine; "they'll hear you."

"Who will?"

"The deer."

"What deer?"

"You get that blanket on the foot of my bed, roll up as I am, and then I'll tell you. It's a game."

Barby hurried to get the blanket and roll up beside her cousin.

"Now tell."

"After I got to be a big girl, I didn't like to take rests," Josephine began. "But I found that even though I was drinking lots of milk and eating fruit and vegetables, I was pretty tired at the end of a basketball game. So Mother suggested this. I was to roll up in a blanket, lie down on the floor (because you can go limp better on the floor than on a cot or bed) and rest for half an hour. While I was resting I was to play that I was waiting for some deer to come very close to me. You know deer are shy, and the only way they'd come was when they thought I was some moss or an old log.

"To play you are a piece of moss, you lie still and go soft all over. The softer you become the mossier you get, and pretty soon the deer will come right up to you and nuzzle you with soft velvet noses.

"When you're a log, you lie very still and very straight. You go all limp as if you were soft with rain water. You don't even think. And by and by the deer will come and nuzzle you."

"Ho, that sounds like fun. But how can you not think?"

"Make your mind go limp," said Josephine. "You've no idea how rested you feel after you've hunted deer that way."

Josephine had to go back to school the next day, and Barby was sorry to see her go. But she promised her cousin she would try being a rabbit and play deer hunting, so that she, too, would have pink cheeks.

"If your cheeks are pink and you are nice and plump when I come to visit you this summer," said Josephine, "I'll think up something we can do to celebrate."

"That would be great. What could we do?"

"How would it please you to visit me at college next fall and see the first real basketball game of the season?"

"That's fine," said Barby. "I hope it will be a good game."

And when Barby saw the game the next fall, her cheeks were as pink and as plump as Josephine's.

Why Kitty Grows

Today I said to kitty,
"You're a cunning little cat;
What makes your fur so silky soft?
And why are you so fat?
How is it you're so frisky?
Are you never tired of play?"
And, listening very carefully,
I thought I heard her say:

"I think it's all the milk I drink,
It's very good, you see,
For kittens and for children, too,
Who'd strong and healthy be.
I drink milk three times a day,
I wonder now—do you?"
My kitty looked delighted
When I said, "Why, I do, too!"

—PANSY NICHOLS.

HEALTH *and the* SCHOOL

Editea by

J. Mace Andress

67 Clyde Street, Newtonville, Mass.

HOW WILL YOU CELEBRATE MAY DAY?

MAY DAY is enshrined in our hearts because of the memories associated with it in history, song and story. In our childhood, too, we looked forward to that day as a time when we might hang a lovely basket of goodies on somebody's doorknob and then ring the bell and run, hoping that we would be pursued. What fun it was to discover the baskets hung by our friends! Some of us may remember dancing with glee around a May pole.

Today the first of May has lost none of its charm. In addition to many of its attractions of a bygone day it is now being identified as a day devoted to the health of childhood. As such, it is destined to have greater significance than it ever had in the past.

The New May Day

May Day—set aside by presidential proclamation and special resolutions of Congress as Child Health Day—is an ancient festal day called to new life for a fundamental social purpose. Its specific purpose is that of mobilizing and making effective the good will we find everywhere toward childhood.

May Day will serve as a focal point for drawing together the scattered forces of good will in the community that look toward child health and happiness, and to organize them into a continuous, well-rounded and far-seeing program for child development.

Schools, churches, park and playground commissions, business and social clubs for men and women, the various "social service" organizations of the community, all have a contribution to make.

In line with the aim of developing in each community a sanely balanced, rounded program of child development, it is suggested that each year some limited phase of the work be specially emphasized. The phase of child development suggested this year for special consideration is the place of play in the life of the child, and community provision for play for every child —play of the right kind, in the right places, and in adequate amount. In any program of play or leisure-time activities for children, the schools of course play a most important part, as training for leisure-time activities constitutes one of the seven great objectives of all education.

One specific feature of this broad emphasis on play and leisure-time activities is the use of May Day as a Play Day for all children, the schools using this opportunity to organize a demonstration of exactly the kind of play we have been talking about—the right kind, under proper conditions.

This new Play Day illustrates a plan for athletics, which feature is an improved form of competition for the purpose of fostering in our American children the true spirit of sport. It has been characterized as "relaxation and fun for all, instead of exertion for the few, and bleacher seats for the many." Its purpose is to focus in one joyous program, in which all children take part, the natural delight of children in plays, games, dramatics, music, rhythms and pageantry. Practical suggestions for the organization of play day, and the experience of many communities in developing this type of sport, have been collected in a publication of the American Child Health Association called "Play Day—The Spirit of Sport," which will be found helpful to schools which are planning to celebrate May Day, 1929, as Play Day for all children.

Some Pertinent Questions

1. Have you carefully analyzed the home-school time schedule of the children in order to make sure that disproportionate assignments of home work do not rob the child of his play time?

2. Does each school in your community provide the necessary space for play through adequate play fields, gymnasiums and auditoriums in all of the buildings, according to accepted standards?

3. Does your community definitely plan a year-round leisure-time program for children, under trained leadership?

4. Does your community provide space in sufficient area in each neighborhood for the boys to play baseball and football and, so far as possible, opportunity for the boys and girls to swim in summer and to skate and coast in winter?

5. Does every child in your community have opportunity to plant and care for a small garden either at home or on land provided by the municipality?

6. In all new real estate developments of five acres or more, is not less than one-tenth of the space set aside to be used for play just as part of the land is set aside for streets?

Some Things to Do

1. Write to your state director of child hygiene to find out what other groups in your community are interested in the progress, so that you may unite with them and gain support through this union.

2. Throw into relief the various phases of the training that the schools give in play and leisure-time activities through appropriate articles in the local newspapers and addresses before interested groups. The objective of this is threefold: (*a*) that through this self-survey the responsible administrators of the school may become more highly conscious of the strong points and weaknesses of the program; (*b*) that both strong points and needs may be interpreted to interested groups in the community, and (*c*) that support may be gained from the community for meeting the evident needs.

The Court of Honor, chosen because of physical fitness by their classmates from the various schools in Charleston, W. Va., to present a May basket to Governor Howard M. Gore when the governor officially opened the 1928 Child Health Day celebration in the state.

3. Set in motion the organization of a school Play Day for May Day, 1929, using as your starting point the experience of other communities as indicated in "Play Day—The Spirit of Sport."

The scope of health activities for May Day is so great that every school system and every school throughout the country may participate in this nation-wide celebration to promote the health of children. If you are a classroom teacher you may do something worth while on this day regardless of the attitude of your city or town. A small beginning may pave the way for a longer observance next year. How will you celebrate?

In preparing this editorial the editor wishes to acknowledge the helpful suggestions of Miss Anne Whitney, acting director, Division of Health Education, and Miss Lucy Oppen, staff associate, American Child Health Association, New York.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

CONDUCTING A SCHOOL DEMONSTRATION IN ANIMAL NUTRITION

IN PLANNING the nutrition program of the city health department, Winston-Salem, N. C., we have sought to relate subject matter to the child's interests. When an appreciation of the subject has been grasped, we have found the correlation of nutrition with other subjects both interesting and practical.

Every normal child enjoys a pet and, when responsible for its feeding and care, becomes interested in its growth and well-being. Under controlled conditions in the schoolroom, the effect of certain foods on young animals may be taught in such a way as to make lasting impressions and to arouse an interest in personal well-being. The purpose of this article is to furnish directions for conducting nutrition demonstrations in the grade schools, using white rats as subjects.

Owing to the crowded condition existing in most schools, it is difficult to find a small room in which conditions are ideal for the experiment. We have found the home economics department, because of access to food, water and cleaning facilities, the most convenient place. The home economics teacher also finds the experiments invalu-

able in the teaching of food values. When the experiment is desired in other classrooms, the teacher will find a way to meet requirements that are necessary.

One rat was fed on sugar and the other on milk.

As to equipment, the balances and weights are the items of greatest expense. We have secured sets for about $23. In many instances, sets can be borrowed from some other department in the school.

Rats may be secured from a state agricultural college or from private laboratories in which rats are reared for experimental purposes.

Cages may be made by the manual training department or by a tinner or may be purchased from companies dealing in laboratory supplies. Cages 10 inches in diameter by 12 inches deep are large enough for simple experiments, with one rat to the cage. Food containers may be assembled from local stores. Small glasses for drinks should be wired to the cage, to prevent spilling. Pans for holding the cage can be bought. These enable easy daily cleaning by removing the paper towels upon which the cage rests. A sifter for mixing the salt with the meal, a small brush for cleaning, and a knife and tablespoon will constitute other equipment.

The teacher in charge of the experiment should know food values and have the proper appreciation for the care of the animals placed in her charge. She may, with the assistance of the nutritionist, be able to conduct a satisfactory experiment without having had previous training in food values. We find the following suggestions and instructions adequate in our schools:

"The purpose of the following experiments is to show the effect of certain diets on the growth and well-being of young rats. The diets may be deficient in some food element. Symptoms will be noted, weights made and conclusions drawn from the data obtained.

"Special attention must be paid to the care of the rats. The cages and utensils must be kept clean, by washing them with hot soda water when necessary. The rats must be kept comfortable as to temperature and as quiet as possible. Food and water must be supplied each school day and enough given on Friday afternoon to last till Monday morning. Students having the care of the rats must report regularly at a definite time to the home economics teacher or other teacher in charge.

"In no case shall any food be given any rats, except by permission of the nutritionist or teacher in charge of the experiment. Failure to follow these rules will ruin the value of the experiment and the demonstration will be useless.

"Only care-takers are to visit the room in which the rats are kept (when a separate room is possible). Arrangements can be made whereby the experiments may be of value to all the school."

The special foods may be coffee, milk, soft drinks, green vegetables or candy. The cage food consists of corn meal and salt (5 cups of corn meal to 1 tablespoon of salt).

The rations are as follows:

Coffee—2 tablespoonfuls per rat per day (2 teaspoonfuls sugar per cup of coffee).

Soft drink—2 tablespoonfuls per rat per day.

Milk—2 tablespoonfuls per rat per day.

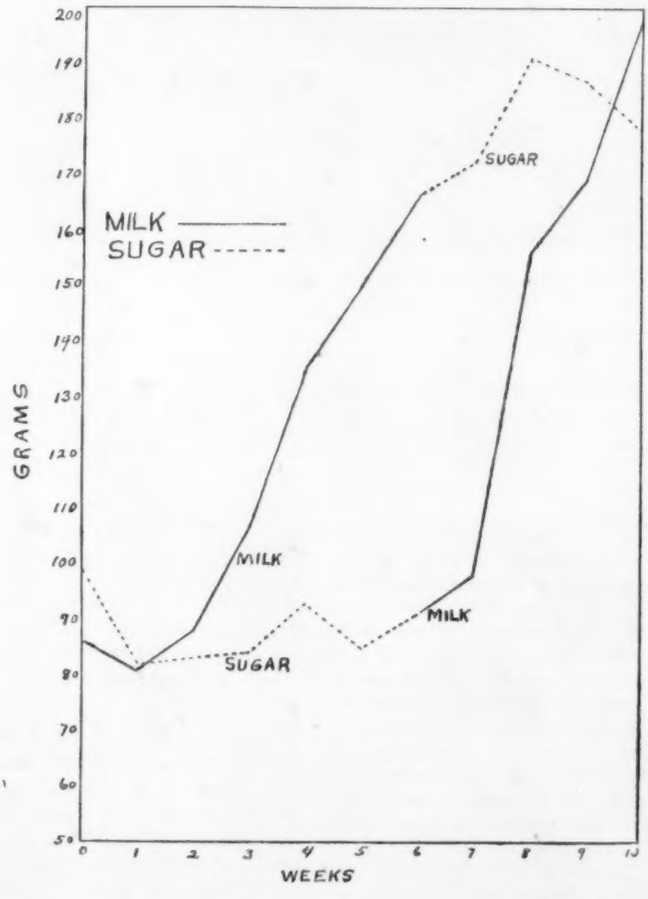
Green vegetables—about 15 Gm. per rat per day.

Sugar—about 3 Gm. per rat per day.

Meal—all they can use.

Only one special food, plus the meal, is used for each rat during the term of the experiment.

From the appearance, weight and manner of the rats, conclusions can be drawn as to the effect of the special food on their growth and health. Children should be responsible for drawing conclusions as far as possible. They will notice their size and the appearance of their fur, whether rough or soft and glossy. They will notice any restlessness of the rats fed stimulants. Children will sometimes insist on our changing the special food, such as coffee, to milk. We tell them



The graph indicates the growth in grams per week for the group of rats described by Miss Whittinghill.

that we will do so as soon as the rat has taught the lesson to all the class.

The experiment should continue for a period of from four to six weeks, in order that definite results may be obtained. By changing the food at this time, another experiment is possible, provided milk is substituted for the harmful food, and coffee, sugar or soft drinks are substituted for the milk. Other foods of interest to the teacher and the class may be used. At the close of the experiment, when the interest has ceased, the animals should be quietly disposed of by the use of an anesthetic.

Bibliography

Spencer, Gene. An Animal Feeding Experiment, Showing Effect of Deficient Diet on Growth. Division of Extension, Nutrition and Health Bureau, University of Texas, Austin.

Whittinghill, Eleanor. Nutrition Experiments in the Schools of Winston-Salem. American Journal of Public Health—pp. 1121-1124, September, 1928.

Addresses for obtaining cages, balances and weights, and the prices, can be obtained from laboratory supply companies or by writing to the Winston-Salem health department.

ELEANOR WHITTINGHILL,
Nutritionist, City Health Dept.,
Winston-Salem, N. C.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

THE brilliant work in the prevention and cure of tuberculosis has borne fruit in a greatly reduced death rate, but the battle is not yet over. It is still unfortunately true that more people between the ages of 15 and 40 die from this disease than from any other cause. This led the commission on the curriculum of the National Education Association to publish in the sixth yearbook of the department of superintendence a recommendation that the course in health should contain a section on tuberculosis.

The child health education service of the National Tuberculosis Association has therefore prepared a pamphlet entitled "Tuberculosis in Its Relation to the Public Health"[1] for use in high schools. It is an interesting review of the fight against tuberculosis.

THE Modern School Readers[2] are unique in that they contain selections of value in realizing the social efficiency aims of education. Most school readers are concerned with methods of reading rather than content. Although the authors have not neglected modern methods of teaching reading, so that children may grasp the mechanics of the reading process, they have aimed to educate "each pupil so that he shall become efficient in the largest measure possible in view of his gifts—in work, citizenship, leisure, physical development, and moral and religious attainments."

Under physical efficiency the authors have made selections that would contribute to this end by (1) presenting ways of achieving and maintaining good health and vitality; (2) holding up ideals of good health and vitality; (3) reporting successes achieved by reason of physical vigor; (4) reciting acts of physical prowess, and (5) portraying the advantages of a beautiful, perfectly developed body.

The plan of this series of readers is admirable. The selections on health will prove helpful. The authors have broken ground for a new conception of school readers.

READERS of these columns will be interested to know that Dr. Wood and Dr. Lerrigo have written a supplement[3] to accompany their valuable book, "Health Behavior." It is filled with practical suggestions for teachers and supervisors in administering health education programs with special reference to the objectives listed in their book.

The authors maintain that it is not necessary to urge any special course of study or any one textbook in order to be successful in carrying on a health education program. They declare that the best of our textbooks and modern courses of study touch on the objectives presented in their scales in "Health Behavior." A mechanically made-to-order program in health education cannot succeed. It must be adapted to the needs of the children. In this supplement the authors give further directions as to how this can be brought about.

YES, colds are a nuisance, but they are more than that. They represent great economic loss and marked discomfort. "Just a cold" has been a by-word which indicated something that did not amount to much of anything. In the light of our newer knowledge on this subject we know that rheumatism, tuberculosis, heart disease, sinus infection, kidney trouble, chronic sore throat and nasal infections have their beginning in a cold or in the flu. Deafness may often be traced to a cold. One investigation of twenty-six industrial sick benefit associations covering a period of six years shows that 47 per cent of the absences causing disability for eight consecutive days or longer were due to respiratory diseases. It is estimated that colds cost the city of Chicago $20,000,000 annually.

Every teacher and school administrator knows about the vast amount of absence caused by colds

Her name is Mary Lize. She had a part in the May Day pageants at Logan, W. Va., last year.

both in school and later in business. Two interesting pamphlets, "Just a Cold? Or—"[4] and "Join the 'No-Cold' Club"[5] have packed into them some valuable information about the cause, prevention, treatment and cure of colds that should be in the hands of every teacher. Every school child in every grade should receive definite instruction concerning such topics.

EVERY student of health education would like to keep up to date in his particular field, but there are so many publications on health that this seems almost impossible. Fortunately the National Health Council operates a National Health Library that gets out a Library Index[6] in which it lists the important articles on health that appear in various publications and also the new books received.

Would it not be well to ask your library to put this publication on your list?

1. For use in high schools. Pp. 13. National Tuberculosis Association, New York, 1928.
2. By Ruth Thompson, Harry Bruce Wilson and G. M. Wilson. Published by Wagner, San Francisco.
3. Health Behavior Supplement. By Thomas D. Wood and Marion Olive Lerrigo. Pp. 32. Public School Publishing Company, Bloomington, Ill., 1928.
4. Metropolitan Life Insurance Company, New York, 1928.
5. Issue of "Chicago's Health," October, 1928. Published by Chicago Department of Health.
6. Issued weekly, $2.50 a year. National Health Library, 370 Seventh Ave., New York.

New Books *on* Health

Reviewed

By

Morris Fishbein, M.D.

BOXING SIMPLIFIED

By C. E. Kennedy, M.D. Pp. 75. The Antioch Press. Yellow Springs, Ohio, 1929.

THERE has been of late a revival of interest in the subject of boxing. If it is possible to learn the technic from a book, the manual by Kennedy should be exceedingly useful. It is adequately illustrated and calculated to cause the mind to provide effective direction for the muscles. The book contains not only much material on boxing but brief suggestions for general hygiene.

COMMUNITY HYGIENE

By Dean Franklin Smiley, M.D., and Adrian Gordon Gould, M.D. Pp. 350. The Macmillan Company, New York, 1929.

THERE are certain problems in human care that are distinctly individual. These include the diagnosis and treatment of disease as it occurs in the individual human being.

On the other hand, problems of food, water, milk supply, disposal of sewage, occupational diseases and education of the public in relationship to various diseases are distinctly community problems. So also are such subjects as the relationships of physicians, nurses and public to the hospital, the prevention of quackery and the activities of voluntary and public health agencies.

The book by Drs. Smiley and Gould is planned particularly for college students interested in hygiene and its sociologic aspects. Each of the chapters is supplemented by a bibliography. The authors have selected well from the literature, and thereby made available a most readable and useful textbook.

HOW TO ENJOY HEALTH

By Claude Lillingston, M.D., and Nora Hill, A.R.R.C. With preface by Sir Squire Sprigge, M.D. Pp. 287. Price, 2/6. Hodder and Stoughton, London, 1928.

THE League of Red Cross Societies has been publishing for some years a monthly journal, with the title *The World's Health*. It has also provided editors of Red Cross journals throughout the world with original articles on health and preventive medicine.

The authors of this publication have collected a number of such essays in book form with a view to developing a health book useful to readers generally.

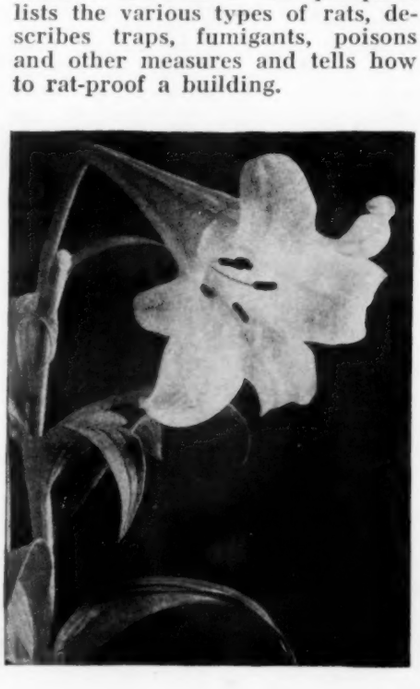
The book consists of discussions on such essential subjects as diet, blood pressure, pasteurization, sleep, drug addiction and colds.

For those who enjoy general reading in the health field this book will be interesting. The essays are well written; they are supplemented with bibliographic references in some instances; and the advice they contain is well worth the price of the volume.

THE RAT

Arguments for Its Elimination and Methods for Its Destruction. Price, 5 cents per copy. Public Health Bulletin No. 180. August, 1928. Government Printing Office.

IN this useful little bulletin the readers will find not only all of the arguments from a public health and sanitary point of view for the destruction of this pest but also the methods to be used. The pamphlet lists the various types of rats, describes traps, fumigants, poisons and other measures and tells how to rat-proof a building.



WHITHER MANKIND

A Panorama of Modern Civilization. Edited by Charles A. Beard. Pp. 408. Price, $3. Longmans, Green & Co., New York, 1928.

IN ONE volume edited by Charles A. Beard, such competent surveyors of the current scene as Julius Klein, Havelock Ellis, George Dorsey, Stuart Chase and C.-E. A. Winslow discuss such varied topics as business, war, the family, play, education and health.

The section on health by Winslow is a repetition of much that he has written in other places, indicating the need for more and more research and for a definitely organized program in the field of public health. The book is a stimulant to thought and action.

DON'T BE AFRAID

By Joseph Lobel, M.D. Translated by George F. Dunay. Pp. 233. Price, $2. G. P. Putnam's Sons, New York, 1929.

DR. LOBEL, who it appears is a physician at one of the German watering resorts, has provided, in catchy style, a number of essays on health subjects. He credits the German Putter, the Englishman Slosson (probably our own American Slosson), and the Frenchman Varigny as his sources of inspiration.

He has a sense of humor. He discusses such timely topics as spring fever, sleep, circulation, glands, fear and state medicine.

The articles are such as are regularly turned out by the majority of writers on health topics for the public press with perhaps a little more "bounce" than is possessed by most of them.

PUBLIC HEALTH AND HYGIENE

A Student's Manual. By Charles Frederick Bolduan, M.D. Pp. 325. Price, $2.75. W. B. Saunders Company, Philadelphia, 1929.

TEXTBOOKS on health and hygiene vary from small manuals, such as the one here considered, to the more extensive work of Park and Rosenau. The manual by Dr. Bolduan serves well as a brief introduction to the general subject. It is scientifically sound and sufficiently nontechnical to attract any intelligent general reader.

There are numerous illustrations and an appendix of tables.

News *and* Views

From the

FIELD OF HEALTH

INFLUENZA STRIKES WHOLE POPULATION OF PACIFIC ISLAND

A small island in the Pacific Ocean probably holds the record for the illness of a whole population. A small inter-island steamer from one of the Fiji group visited the island of Rotuma in December. Germs of the influenza epidemic which practically went around the world were communicated to the inhabitants and within seven weeks almost the entire population of 2,000 or more had influenza. The only ones that escaped were four European residents and a handful of natives.

Bacteriologists explained the sweep of the epidemic by a lack of immunity acquired through occasional exposure to the disease. In most places there is a little influenza every year. Rotuma had not had a visitation for years and the people readily fell prey to the germs.

FUND PROVIDES FOR STUDY OF HUMAN RELATIONS

Tremendous amounts of data concerning human behavior have been accumulated during the last ten years. Intelligence tests, new psychologic theories, studies in comparative psychology, in delinquency, in crime and in many other related subjects have been developed.

Believing that the time has come for sifting all the available evidence, three large foundations have cooperated to establish an Institute of Human Relations in connection with Yale University, *The Journal* of the American Medical Association announces. An endowment of $7,500,000 has been provided through the Laura Spelman Rockefeller Memorial, the Rockefeller Foundation and the Commonwealth Fund.

The institute is to be affiliated with the law and medical schools and perhaps with other departments of the university so that students may be trained to think of their professions as concerning human beings rather than test tubes, statute books, codes and creeds, according to the sponsors of the new plan.

AFRICAN WORKER WINS MEDAL OF MERIT

Bulla Mfum is a native assistant on the staff of the Central Hospital of the American Presbyterian Mission at Elat in the province of Cameroun, West Africa. Because of his outstanding medical and surgical work Bulla Mfum has recently been awarded the medal of native merit, accompanied by a certificate which reads as follows:

"The Governor of the Colonies, Representative of the French Republic in Cameroun, Officer of the Legion of Honor, awards to Bulla Mfum, an intelligent and devoted native who is a splendid example to his people, also who is an interne in the Hospital of the American Presbyterian Mission of Elat where he has served for fifteen years with rare devotion, the Medal of Native Merit."

COMMUNITY HELPS BUILD ITS HEALTH CENTER

Kitzmiller, Md., the central unit of a group of mining towns has a health center which the whole community helped to build. An old one-room house was donated as a beginning. Business men gave lumber to make additions. Local painters dressed it up with paint, electricians fitted it for lights, home economics students made curtains and school boys made shelves, tables and bookcases. Every one had a part in the work, as described in the *American City*.

The little building is equipped with a dental chair, a hospital bed and other necessary furniture. Classes are held in the care of the sick, prenatal care, infant care and feeding. At intervals during the year clinics are held for tuberculosis, expectant mothers, dentistry, antityphoid inoculation, eye, ear, nose and throat, crippled children and mental cases. The whole community is thinking health.

PHYSICIANS TO STUDY MAYA DOWNFALL

Inquiry into the cause of the downfall of the great Maya empire in Central America is to be made by an expedition of physicians and public health workers from the Harvard Medical School and the Carnegie Foundation. Although nothing remains of the once beautiful city of Chichen Itza but ruins, nearby villages are inhabited by almost pure-blooded Maya Indians. The company of scientists hopes to study the diseases that prevail among these people and thereby discover those that afflicted the oldest Americans.

OFFER SCHOLARSHIPS IN HEALTH EDUCATION

Two scholarships for women in the field of health education are available at the Massachusetts Institute of Technology in the department of biology and public health for the school year 1929-1930. The awards will be based on the nature and quality of the applicant's previous academic work, the ability shown in public health or educational work, her need of the scholarship aid and the probable value of her further contribution to health education. Those who are interested are invited to write to the National Tuberculosis Association, 370 Seventh Avenue, New York City, for application blanks. The applications must be filed before June 1.

PLAN WORLD CONGRESS ON MENTAL HYGIENE

Plans for the first international gathering of leaders in mental hygiene work have been announced by Clifford W. Beers, founder and secretary of the National Committee for Mental Hygiene. The congress is to be held in Washington, D. C., the week of May 5 to 10, 1930. It is sponsored by a committee of psychiatrists, educators and distinguished citizens from twenty-four foreign countries and from the United States. This group intends to invite the participation of all countries and to enlist the cooperation of heads of governments and officials as well as private institutions, associations and individuals.

PROTECT DOG FROM RABIES

This dog is being vaccinated against rabies, which has been unusually prevalent during the past year throughout the United States. Health officers say that rabies would soon be extinct if owners of dogs would have their animals vaccinated and keep them muzzled or on leash when they are allowed outside.

Pacific and Atlantic

Wide World

WOMEN LIKE FENCING

Fencing is gaining rapidly in popularity as a sport for women. In the circle at the left are sixteen members of an enthusiastic squad at Temple University in Philadelphia.

NOT A FIRE AT SEA

University of California rowing crews used flares to light their course when they had extra night practice in preparation for the opening of the season.

Wide World

HELEN WILLS POSES

Health, good looks, artistic talent and intellectual ability contribute to the poise evidenced in this photographic study of Helen Wills, the ideal of many an American school girl.

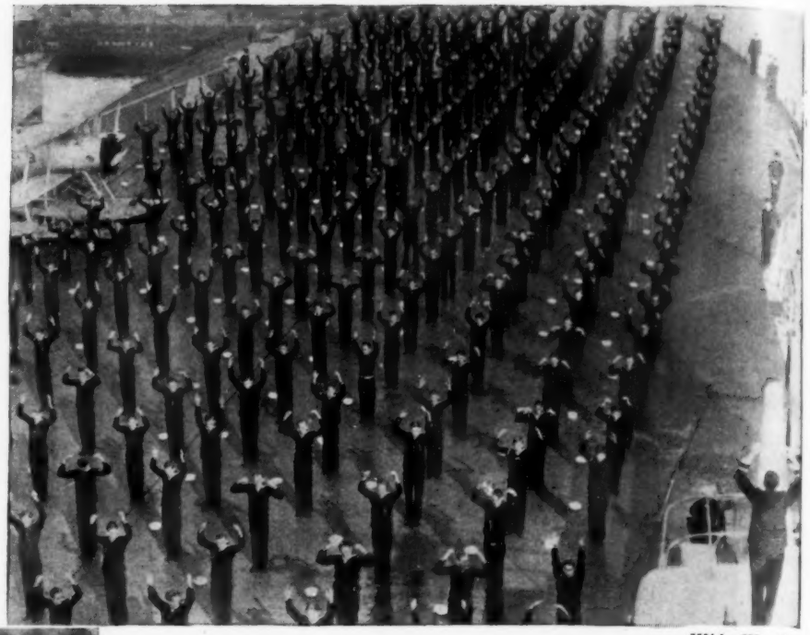
Wide World

Underwood and Underwood

APRIL SHOWERS SEND SIGHTSEERS TO SHELTER UNDER THE COLONNADE OF THE FIELD MUSEUM, CHICAGO.

KEEPING NAVY MEN FIT

The huge gymnasium class at the right is made up of sailors on the giant airplane carrier, the U. S. S. *Saratoga.* The instructor, who is seen in the lower right-hand corner, directs by movements and with the megaphone, dimly perceptible at his side.



Wide World

Pacific and Atlantic

NOVEL BIB WARNS OF SPREADING DISEASE

During the winter's epidemic of influenza the health department of Newark, N. J., distributed the novel bib this youngster is wearing as a warning that affection unwisely displayed might easily spread the germs.

WOMEN WAR ON DIRT

Women of Norfolk, Va., inaugurated a clean-up campaign by arming themselves with gunny sacks and spears to clear off the city's unkempt streets.

Underwood and Underwood

Questions *and* Answers

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.

Dreams; Fever

To the Editor:—Is there any truth in the remark that when you sleep on your back you will dream. Why is it that when a fever breaks you can tell whether or not the person is going to die?

M. B. P., Nebraska.

Answer.—There is no truth in the statement about dreams. Nor is there in the question about fever, except in a few diseases that terminate in a crisis; that is, a sudden drop in temperature and a remission of all symptoms. This period is sometimes attended with marked weakness and is a critical stage in the disease. What happens to the patient within a few hours thereafter is often indicative of the ultimate outcome of the case.

Infantile Paralysis

To the Editor:—Can the muscles of a young person's leg, which was paralyzed in early childhood, be made to develop or can anything be done to make it the normal size, provided the person affected is able to walk without support?

R. F., Texas.

Answer.—There is sometimes a considerable degree of latent activity remaining in muscles that seem to have been completely paralyzed. To what degree muscular power can be restored in a particular case, or to what degree the action of muscles destroyed can be taken over by other muscles that remain intact and under the control of the central nervous system, is something that can be determined only by a physician experienced in this field after a careful examination.

The fact that the patient is able to walk without support is gratifying, as a great many victims of infantile paralysis are unable to walk.

From the knowledge and experience gained in the large epidemics of infantile paralysis in the past few years has come the discovery that much more can be accomplished in the after-treatment of patients with this disease than was formerly thought possible. No cure for the acute infection is known, but many deformities that follow it can be prevented and sometimes cured by proper treatment.

Crossing of Species

To the Editor:—A matter was broached to me recently that I should like to be conversant with in a general way. Why does the seed run out in a mule and also in an octoroon? Are both male and female of these two species sterile?

R. W. C., Michigan.

Answer.—The mule is not always sterile. Several authentic instances have come to light in recent years of mare mules having normal offspring and of these offspring having normal progeny. The majority of mules, however, though they are normal in secondary sexual characters, are incapable of producing viable eggs or sperms. Studies of the chromosomes of the germ cells have shown that the chromosomes of the horse and the ass are different in size and shape, and usually this hinders the normal processes of maturation of the germ cells.

There is no basis for the idea that octoroons are infertile or have a reduced fertility. In fact there is little evidence that reduced fertility appears in connection with any of the negro-white crosses. The opposite seems to be more nearly the case.

Books for Women

To the Editor:—Please send me a price list and the names of some books for women, giving reliable information.

R. S., Iowa.

Answer.—Some good books of especial interest to women are the following: "Four Epochs of a Woman's Life," by A. M. Galbraith, published by W. B. Saunders, Philadelphia; price $1.50. "Truth about Women," by W. M. and C. G. Gallichan, published by Dodd, Mead & Co., New York; price $2.50. "Text Book of Sex Education," by W. M. Gallichan, published by Small, Maynard & Co., Boston; price $2.50.

Varicocele

To the Editor:—What are the causes of varicocele? Will such a condition affect the general health of the body and of the mind? Does it usually affect virility? Can it be cured by medical treatment or is an operation necessary?

F. J. C., New Jersey.

Answer.—Varicocele is due to an inherent weakness of the walls of the veins involved. In certain cases, pressure, as of a truss, may be a factor in causing it. It does not as a rule affect the general health of the body, nor does it affect virility.

It frequently produces mental disturbance because the person worries about it. It can be cured by operation. Medical treatment is rarely of value.

Influenza

To the Editor:—What has been found out about the influenza? Is there any means of prevention such as cascara, quinine or bromo-quinine? Are these bad for the heart?

R. B., Michigan.

Answer.—There is no method of preventing influenza, but the hope that there is such was utilized by patent medicine manufacturers and others to exploit the public during the recent epidemic, as it has been exploited on previous occasions.

No drugs that have any potency are without power for harm if improperly used.

The best way to prevent influenza is to keep as far as possible from persons who have it and to maintain the best bodily condition by simple food, moderate exercise and plenty of rest. On the first appearance of symptoms, one should go to bed and send for a good doctor.

Worms

To the Editor:—My little daughter, 2 years old, has worms. Will you kindly advise a preventive for this condition?

L. L., Ohio.

Answer.—It is impossible to give advice about worms without knowing the variety. There are tapeworms, seat or pin worms, round worms and other varieties. There is no way to prevent some of these

and in the case of tapeworms, which arise usually from infested meat, the only way is to avoid eating meat that has not been thoroughly cooked.

The cure depends entirely on the kind of worm present.

Nervousness

To the Editor:—My daughter is very nervous and several doctors have advised triple bromides. Some advise against this. Are they harmful? They seemed to bring out eruptions on the face. Lactose has been advised for nervousness. Have you known of any benefits from milk sugar? Has yeast any value in this condition? Does changing of intestinal germ life bring beneficial results? A. B., Missouri.

Answer.—Triple bromides are no more harmful than single bromides. All bromides are likely to result in acne when taken for long periods. We doubt whether there is any advantage in lactose over other forms of sugar. We also doubt the value of yeast in nervousness, which, in itself, is an indefinite term.

Whether or not it is of advantage to use lactic acid bacillus and lactose to change the flora of the lower bowel is a matter about which there is a difference of opinion in the medical profession. In nervousness, as in other conditions, the proper procedure is to discover if possible the cause and to remove or alleviate it. Such a patient should be under the care of a physician.

Psoriasis

To the Editor:—What is the nature and cause of psoriasis? Can it be cured or so nearly cured as to be rendered invisible? Is there any likelihood that a disease of this nature will become more acute? Can it be successfully treated by a physician in general practice? Would it be advisable to take x-ray treatment? Is it worse in spring or summer than in fall or winter? The patient has taken treatment from both special and general physicians. He has had the disease several years and it was very troublesome last fall or summer but after treatment by a general physician it is now considerably better.

J. W., Pennsylvania.

Answer.—The cause of psoriasis is unknown. Not infrequently it disappears with or without treatment and remains quiescent for a long period, only to return again. Various methods of treatment are helpful in certain cases.

The manifestations of psoriasis are rarely acute if by that is meant acuteness of symptoms such as pain and itching. Many general practitioners have treated psoriasis with a measure of success. No physician, whether a general practitioner or specialist, can guarantee a cure of the disease. It has baffled the most experienced specialists.

Exposure to light often causes disappearance of the eruption and therefore it often disappears in summer. We should certainly advise a patient who had been treated successfully by a practitioner to remain under his care.

Camomile Tea

To the Editor:—What is camomile tea? Is it habit forming? Is it a drug? Is it of value? The old folk seemed to have used it as a cure-all. J. W., New York.

Answer.—Camomile tea is not habit forming. It is a drug, but has practically no more value in the treatment of disease than has any hot drink. It is popularly used as a bitter and aromatic tea and poultice, any effects being due mainly to the hot water.

Administering of Medicines by School Nurse

To the Editor:—May we ask your opinion on the advisability of school nurses giving a dose of aromatic spirits of ammonia to school children in certain emergencies? M. B. H., New Jersey.

Answer.—It is not easy to advise as to the wisdom of the school nurse's giving medicine of any sort. It is always better to have a physician available for emergencies.

It is true that aromatic spirits of ammonia is not likely to do harm and, if the school physician or any physician who is to be called in case of emergency, believes that the school nurse can safely administer small doses of aromatic spirits, it might be warranted.

One of the principal objections to the giving by the layman of medicines of any sort in an emergency is that it often leads to failure to call a doctor and consequent failure to discover some more or less serious condition that needs medical attention.

Cysts

To the Editor:—What are cysts and what causes them? I have small bunches behind my ears which contain a cheesy white substance that has an offensive sour odor. A doctor says they are cysts. Will cutting off remove them permanently? F. J. H., New York.

Answer.—A cyst is defined as "an abnormal sac containing gas, fluid or semi-solid material."

The description given leads to the surmise that the inquirer has cysts of the sebaceous glands; that is, the glands that secrete the fatty substance that lubricates the skin and keeps it soft.

These cysts could be removed by operation probably, but that is for the doctor to decide.

Toxin-Antitoxin

To the Editor:—Please let me know if there are cases on record of fatal results or permanent injury from the use of toxin-antitoxin. What are the serious results it has produced in the few cases? F. C. S., Illinois.

Answer.—Accidents have happened with toxin-antitoxin, in cases in which accidental contamination of the toxin-antitoxin have occurred or in which the injections were improperly given. These accidents have been negligible in comparison to the millions of cases in which inoculation has been given with perfect result.

Antirabies Vaccination

To the Editor:—Please inform me as to how effective the antirabies vaccination of dogs has proved to be. Recently the *Science News Letter* published an article saying that it was not entirely effective. E. B. M., New York.

Answer.—From an experimental standpoint it appears that vaccination does not regularly protect dogs against later infection with rabies virus, at least against artificial exposure. It is difficult to estimate definitely the value of vaccination in the field. That the method of vaccination is not 100 per cent effective is shown by reports of a number of cases in which prophylactic vaccination has apparently failed to protect dogs against subsequent exposure. The percentage of such cases, however, has been small as compared with the large number of dogs vaccinated and to the incidence of rabies among nonvaccinated dogs. On the other hand, it is not known how many vaccinated dogs have been actually exposed to infection.

In communities in which rabies is epizootic, good results following the use of vaccination in controlling the disease are reported by veterinarians. In many of these cases, however, other measures as licensing, muzzling, destruction of stray dogs and quarantine are also more or less vigorously enforced, so that the exact part played by vaccination in controlling the disease (other than as a means of bringing these other factors into play) is often obscured. It is the opinion of many state health officials, however, that vaccination aids in controlling outbreaks of the disease when used in conjunction with other standard measures.

Ulcer of the Duodenum

To the Editor:—Can I cure an ulcer of the duodenum by dieting while working every day? Can I cure it without lying in bed for six or eight weeks? Or is an operation the only way out?

C. H. W., Illinois.

Answer.—It is possible for an ulcer of the duodenum to heal by dieting even if one is working at some occupation, but it is certainly not the best course to pursue to promote its healing.

Complete rest in bed for a considerable period and a carefully restricted diet are most important factors in the healing of such an ulcer.

The victim of such trouble should be under the care of a physician and follow his advice to the letter.

Cancer

To the Editor:—About four years ago I caught my left breast in an electric wringer. At times I get pains like needles pricking. The doctor says a lump has to form before it is a cancer. I have a dear friend who has cancer of the face. In dressing the face members of her family do not wear rubber gloves. They wash the bandages along with other clothes. Nor do they wash the dishes separately. We have told them to be more careful or they will get cancer. Is that possible?

A. F., Indiana.

Answer.—It is not likely that cancer will follow the injury received. Cancer is much more likely to follow, not a single blow or bruise, but continued or repeated irritation.

As to the friend with cancer, the dictates of ordinary cleanliness would indicate careful washing, but cancer is not contagious and it is not necessary to handle the matter of washing the parts or the clothing as one would handle them in a case of pus infection.

Training the Eliminative Processes

To the Editor:—Dr. Watson suggests leaving the child alone on the toilet chair for twenty minutes when training the eliminative processes. Certain mothers object, fearing formation of hemorrhoids. Is there any foundation for this fear?

E. P. E., Michigan.

Answer.—It is not likely that the placing of a child on the toilet and urging to promote bowel movement in the usual way will produce hemorrhoids. Hemorrhoids are not likely to occur at such an early age. If, however, the habit of daily bowel movement without straining is not secured after a reasonable time, a physician should be consulted.

The age at which children can be taught to keep dry varies much with the child and the training. Many children learn to ask to be taken up before the age of 1 year. Every normal child ought to have acquired this habit before the age of 2. There are many cases, however, when for one reason or another incontinence of urine continues for a long time and is sometimes difficult to control.

Listerine and Gargles

To the Editor:—In my biology class at school we have had an argument as to the best gargle that would help prevent influenza. The instructor told us that a solution of one fourth of a teaspoon of common salt dissolved in a tumbler of warm water was the best. A girl in the class asked why Listerine was not a better gargle, so I was requested to write to the American Medical Association for information as to the composition of this preparation. We shall appreciate this information.

B. M., Pennsylvania.

Answer.—Your instructor has given good advice. A weak solution of salt in water is probably as useful for cleansing the mouth and throat as any product that contains drugs. The chief ingredient of Listerine is alcohol, which makes up one fourth (25 per cent) of the product. Then an odor and taste is given to the preparation to conform to the public's idea of what an antiseptic should be. These are obtained by the addition of such products as thymol, eucalyptus, peppermint, wintergreen and boric and benzoic acid. Such flavoring may make a mouth wash pleasant but its antiseptic value is practically *nil.*

Any preparation powerful enough to destroy the germs of disease on the mucous membranes of the mouth and throat would also be powerful enough so to damage the mucous membrane itself as to make the remedy worse than the disease. Mouth washes and gargles have a place in adding to comfort and, to some extent, in removing, by mere mechanical means, food detritus and such bacteria as may adhere to the detritus.

Hot Oil Treatments

To the Editor:—Are hot oil treatments good for dry hair that is inclined to break? What oil would you recommend?

C. J., Wisconsin.

Answer.—When hair tends to be very dry, the use of an oily material on the scalp and hair is of advantage. There is no particular advantage in applying it hot. Castor oil and alcohol—equal parts or 1 to 2 parts—is often used.

Syphilis

To the Editor:—I have a friend who was given the Wassermann test about eighteen months ago. It was found that she had syphilis. She immediately began to take the intravenous treatment of salvarsan. After the twelfth treatment she had a Wassermann test again and the result was still positive. She then took another course of twelve treatments and after a month's rest the test was still strongly positive. Another six treatments were given and after three months' rest the test made a few days ago still gave a strongly positive reaction. One doctor told her that if she had had the venereal infection as long as nine or ten years, there was no real cure for her, only temporary relief. Another physician from whom she took subsequent treatments said she could be cured no matter of how long standing her case may be. Which is right? Of course, there is no way in which she can tell when she became infected, but for about ten years she has suffered, until recently, from ulcers in the mouth. Another doctor has told her that a proprietary medicine composed of mercury-proto-iodide, ¼ grain pills, taken internally will cure her. What danger of infecting others is there, if a person is very careful in every way?

R. S. O., North Dakota.

Answer.—In view of our present knowledge regarding the treatment of syphilis, it is not advisable to depend on any one preparation. The best results are secured with what is known as the combined treatment; salvarsan, bismuth, mercury, potassium iodide are all being used in selected cases at various stages of the disease and in different types of lesions. It is impossible to state definitely in any given case the time required to effect a cure, regardless of the kind of treatment, the dosage or the manner in which it is given. Hereditary syphilis is generally regarded as being more resistant to treatment than the acquired type.

As to the likelihood of infecting others, there is practically no danger after one has had a course of thorough treatment by the drugs mentioned, but the only person who can advise about this in a particular case is the physician in charge. On the basis of the symptoms and signs present and the results of the Wassermann test he can determine with reasonable accuracy what degree of infectiveness is present.

It would be the height of folly for the infected person to rely on any proprietary remedy. The issues at stake for her are too great to take chances other than with the best physician she can find.

Asthma

To the Editor:—I have been suffering with asthma in the fall season of the year for quite a long time, and have been told that relief might be had by having food tests taken to ascertain just which foods I should abstain from. I understand that these food tests are given hypodermically. Is there more risk in the making of these food tests than in the giving of ordinary hypodermic injections? Should my physician make these food tests himself or let assistants give them? To what extent can the piercing of a vein be avoided in the giving of hypodermic injections?

A. L., Illinois.

Answer.—Asthma is in many cases due to a sensitivity of the individual to certain protein substances, just as is hay-fever. Whether or not a person is sensitive to a particular material of this sort can be ascertained by applying to the skin where a slight scratch has been made (just as in vaccination for smallpox) a small amount of the substance to be tested; for example, the pollen of a plant, wheat flour, or the like.

There is no particular risk in making these tests. They are not injected into the skin, as a rule. A trained assistant could make such tests satisfactorily.

In making a hypodermic injection the vein is not usually entered, but that may happen to any one and is not likely to be serious.

Tics

To the Editor:—Please tell me what a tic is in mental illness.

A. S., Florida.

Answer.—A tic is defined as "a more or less involuntary repeated contraction of a certain group of associated muscles; a habitual spasmodic movement of any part; a habit contraction."

Sulphur Dioxide; Dioxygen; Corsets

To the Editor:—1. Is molasses preserved with sulphur dioxide injurious to health? 2. What is the objection to the use of Dioxygen? 3. Will the health be impaired by girls not wearing corsets?

A. H., Connecticut.

Answer.—1. Concerning sulphur dioxide, the bureau of legal medicine of the American Medical Association furnishes the following statement: "Preservatives as a class are injurious to health, but sulphur fumes are permitted in certain cases. Sulphur dioxide, especially under certain conditions of use, is rendered more or less inert. The limit, however, in the case of sulphur dioxide has been set at 350 milligrams of total (that is, both free and combined) sulphur dioxide per liter, or kilogram, with an allowance of not over 20 per cent of this amount in a free state."

2. Dioxygen is a form of hydrogen peroxide and objections to it depend entirely on what it is used for.

3. There is no reason to suppose that the health of the modern generation will be impaired by girls not wearing corsets.

Abscessed Teeth

To the Editor:—The writer would appreciate being straightened out as to the important question of removal of teeth considered to be abscessed. Of perhaps a dozen relatives or acquaintances who have had several infected teeth removed, some appear to be substantially benefited, one or two permanently; others apparently not so permanently, and still others not at all. Either the diagnosis of the x-ray technician or the judgment of the dentist was at fault, or both. It seems that many practitioners cannot judge x-rays successfully or the picture is so doubtful that nobody could be sure of its interpretation. How is it that the tissues at the roots of the teeth, when there are numerous extremely sensitive nerves, can be so badly infected as to cause systemic disturbances without any local feeling whatever, when the slightest lesion almost anywhere else in the body will produce considerable local pain and may yet have no noticeable systemic effect? Is this tooth removal program just another half proved, half developed practice, or is it unquestionably advisable to remove all teeth that are suspected of being abscessed?

S. C. S., Indiana.

Answer.—The reason that teeth which are shown to have chronic abscesses should be extracted is as follows: The tissue forming the surface of the root of a tooth is most peculiar in that it has no circulation of blood and, therefore, when an infection destroys the membrane that attaches the root to the bone, this root surface becomes a dead tissue to which other tissues will not subsequently become attached. Therefore, when an abscess at the end of a root destroys a portion of the bone and the membrane that attaches the root to the bone, healing cannot occur as it would following a similar infection in almost any other tissue in the body. The dead portion of the surface of the root serves to maintain the chronic condition indefinitely; it cannot heal until the tooth is removed.

Whenever an x-ray picture shows without question that an area of bone has been destroyed about the end of a tooth, it is a proper rule that the tooth should be extracted.

It is recognized that many x-ray pictures are poorly made and should not be used for diagnosis. It is also recognized that some dentists are more competent than others in interpreting x-ray pictures. One must be acquainted with the anatomy of the bones involved if he is to avoid mistakes.

It is possible for a person to have an extensive chronic abscess at the apex of the root of a tooth without being aware of it, for the reason that the tissue is destroyed so slowly that there is no marked inflammation and therefore no pain.

"Cellasin Cure" for Diabetes

To the Editor:—My husband is threatened with diabetes. He has taken one bottle of 200 tablets of Cellasin, which was recommended, but it does not seem to give relief. Could you advise us?

J. A. H., Wisconsin.

Answer.—Cellasin was examined some years ago by the council on pharmacy and chemistry of the American Medical Association and found to be incapable of doing what was claimed for it. It was claimed to be a ferment which was absorbed into the body and would cure diabetes by its action on the tissues and would both prevent and cure tuberculosis. There is no reason to suppose that the character of Cellasin has changed. It certainly is not a remedy that any person with diabetes should use.

Effect of X-Ray on Eyes

To the Editor:—I am taking x-ray treatments for cancer. I can see great improvement, but the treatments make me very sick for a week or ten days; the last one, six weeks ago, left me a nervous wreck, with loss of strength and prostration. In spite of all that, the original ailment in the right breast seems to be fading away. But I am having serious trouble with my right eye. After the last treatment I had trouble in my neck and severe pain in my face just under the eye. The eye is inflamed and the sight is gone. From the beginning of treatment the sight gradually got dim. Is a condition of this nature likely to follow x-ray treatments and is it a permanent or a temporary condition? I am 52 and my general health is good. At examination the clinic found nothing but the trouble in the right breast. To me the eye condition is very grave. E. L., South Dakota.

Answer.—When the x-ray is used to assist in control or cure of cancer, it must be used in such strength as to result oftentimes in sharp reactions. The best suggestion we can make is that the inquirer rely upon her physicians and follow their advice strictly.

Guard Them Against— Dangerous Infection

Hexylresorcinol Solution S. T. 37 should be in every medicine chest as a *Safe Antiseptic for Abrasions, Cuts, Burns and Scratches.*

ALMOST every day skin abrasions happen in every home. The youngsters get a skinned knee, a burned thumb or a cut finger.

Protect them against dread *infection* which may lead to serious consequences. Apply Hexylresorcinol Solution S. T. 37 freely—*at once.* Bandage lightly, then call the doctor.

Hexylresorcinol Solution S.T. 37 is highly antiseptic and destroys germ-life on less than 15 seconds contact, yet it is non-irritating and soothing—a decided aid in the natural healing of the delicate injured tissues. Deeply penetrative—it reaches *into* the wound where *infection* may lurk.

The dangerous risk of keeping a deadly poison in the family medicine chest as a household antiseptic, where the children may get it with disastrous results, is unnecessary. Hexylresorcinol Solution S. T. 37 is *safe*—dependable—non-poisonous and harmless to mankind even if swallowed. Accidental poisoning is impossible.

Get a bottle today. Be ready for an emergency. Seconds count when there is an accident.

At your druggist's

3 and 12 ounce bottles.

Sharp & Dohme
Baltimore

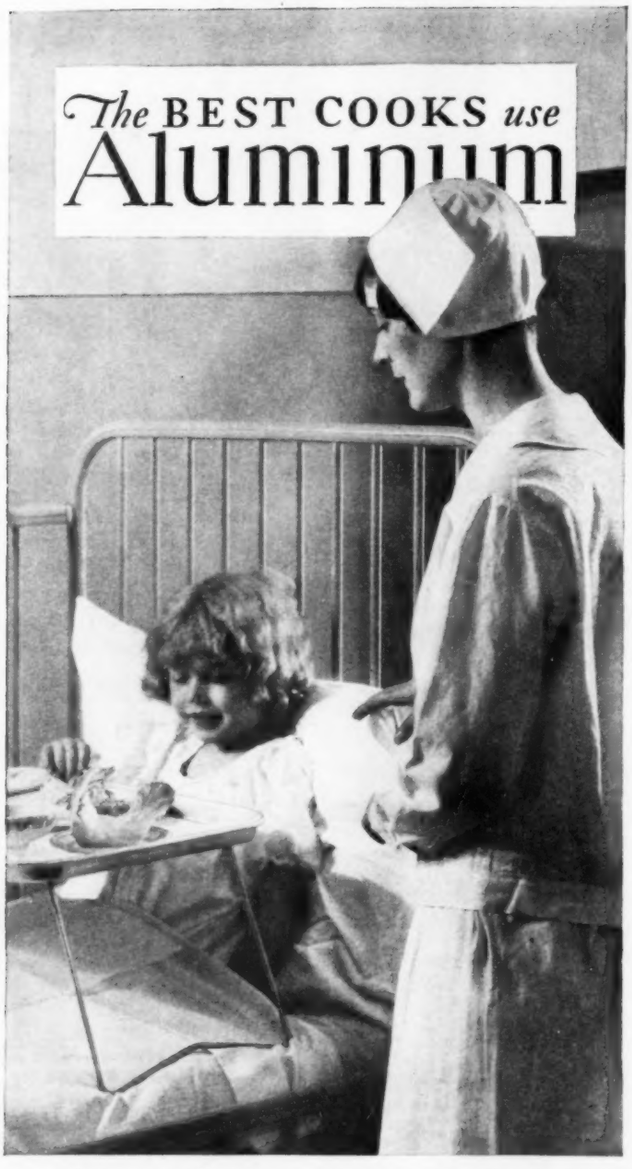
Quality First Since 1860

Sharp & Dohme, Baltimore, Medical Department
Gentlemen:

Please send me FREE, trial bottle Hexylresorcinol Solution S. T. 37. (Liquor Hexylresorcinolis, 1-1000)

*Name*_____ *Street*_____

*City*_____ *State*_____



Good Food is Good Medicine

Hospitals know that surgical skill and patient, expert nursing are only part of the program. *Appetite* must be revived. And that means good food, well cooked. And *that* means, in the majority of hospitals, food cooked in *aluminum*.

St. Mary's Hospital, Rochester, Minn., where the Mayos work; the new Medical Center of New York, world's greatest cooperative hospital project; Battle Creek Sanitarium; Michael Reese Hospital, Chicago—these are only a few of countless institutions where aluminum does the cooking.

Good food is good medicine at home, too. If you would follow the lead of highest authority, make aluminum the *foundation equipment* of your kitchen. Because it cooks everything well; because it is light and manageable; because it is so easy to keep hygienically clean; because it is durable, economical, *beautiful*.

No wonder the best cooks use it!

MAIL COUPON FOR BOOKLET

ALUMINUM WARES ASSOCIATION
Publicity Division, 844 Rush St., Chicago

Please send booklet, "The Precious Metal of the Kitchen," to address written below:

Temperature

To the Editor:—A young man claims he feels well, but he does not look well and is underweight. His temperature is always from 96 to 97. What does low temperature mean? Should he go under a doctor's care because of it, even though he feels well, and is only tired from hard work?

J. W., New York.

Answer.—A subnormal temperature is not necessarily of serious importance if the person is otherwise in good health. It is quite possible that the young man mentioned has overexerted himself and is suffering from fatigue. He ought to have medical advice in regard to this matter.

Fear of Leaving Home

To the Editor:—About ten years ago I collapsed from hard work and worry. I stayed very close to home, until I found myself possessed with a morbid fear of leaving. Just a suggestion to go to do my marketing would start my heart to pounding. When on a rare occasion I would force myself to go, I would feel every minute as though I would die before I got back home. After years of this terrible existence, I got a good deal better. Then two years ago my husband died and left me with three fine children. They are 8, 13 and 16 years old. I worked at sewing all last winter, as I would like to put my children through high school. I probably overdid, and in the spring I collapsed again. For weeks I was extremely weak. I am better now but I have that terrible dread of leaving home. I am chairman of several committees at my church, but I can't make myself attend the meetings. I get panicky when it is time to go. I have been examined by several doctors and they say it is all mental. What would you advise me to do? I read all the literature I can get hold of on nerves, but it seems to me I need something else. I have read and reread Dr. Sadler's books, "Worry and Nervousness" and "Faith and Fear," also Dr. Jackson's book on nerves, and now I am reading "Nerve Control and How to Gain It" by Bruce. I am 44 years old. I am never depressed or melancholy, but I just want to be free like other people.

M. C., Illinois.

Answer.—Such a fear, or phobia, is a well recognized form of mental disturbance. There is a long list of these phobias comprising fears of almost anything one can conceive. Sometimes they are associated with an organic nervous trouble; more often none can be discovered.

The best thing for one to do is to consult some specialist in nervous and mental diseases who has made a thorough study of these conditions. Such books as have been read are sometimes helpful but it is not usually possible for the victim of such a fear to cure herself without the assistance of a wise, sympathetic adviser.

The family physician can recommend a specialist who will be able to advise the patient wisely.

Sterilization of Pin or Needle

To the Editor:—Is it safe to use an unsterilized pin or an unsterilized needle when removing a sliver? V. M. C., Michigan.

Answer.—It is not safe to use either an unsterilized needle or an unsterilized pin for the removal of a sliver. It is a simple matter to sterilize either one by heat or by immersion for some time in an antiseptic like alcohol.

Diabetes Mellitus

To the Editor:—Our little boy, 3 years old, has diabetes mellitus and for the last eight months has been treated by insulin as well as by diet. Several times he has had insulin reactions in the night with no warning to us before he became unconscious. We fear he may have a reaction and we may not hear him in time to get him to swallow the orange juice. What would happen if that were the case? Will he cry if left long enough? What are the chances for full recovery? He has had the disease a year now and is in much better condition than at any time during the year. This case is hereditary seemingly and the child was exceptionally rugged before its onset. He is at all times under his physician's care. R. H., Pennsylvania.

Answer.—The reactions resulting from overdosage of insulin are alarming, not only to the parents but also to the physician. Fortunately, they are not as dangerous as they seem. Death is almost never produced by these reactions and many instances of spontaneous recovery have been observed.

The likelihood for a complete recovery from true diabetes mellitus is slight. A few cases are on record in which great improvement has resulted when thorough and adequate treatment has been received from the beginning of the disease. There is no evidence that cases with a definite family history of diabetes are as a class more severe than cases in which no such family history is obtained. An article on treatment of diabetes by insulin appeared in HYGEIA in December, 1928.

Vital energy

comes from the germ of the wheat— retained in

Wheatena

What a wonderful thing is this golden, life-giving germ of the wheat! Its amazing vitality! Its wealth of minerals, vitamins and nourishing oils!

The high nutritional value of this wheat germ has been recognized for years. Now it is known to be one of our richest sources of *vital energy*.

Wheatena is the nut-brown wheat cereal that retains ALL of this precious germ. This is made possible by a unique roasting process that completely sterilizes the germ.

The same roasting process also makes Wheatena one of the easiest foods to *digest* and *assimilate*.

Physicians have recommended Wheatena for almost half a century . . . for babies . . . for growing children . . . as a wholesome, nourishing breakfast dish for the entire family.

Wheatena is easily prepared and costs less than 1 cent a dish.

The delicious nut-brown wheat cereal

Special Offer!

"Feeding the Child from Crib to College" is an entirely new kind of book for mothers—written by one of the most eminent child-health specialists in America. Absolutely authoritative. Only 10c brings you a copy. Please use coupon on right.

Wheatena sample FREE

☐ Check here and we'll send you a sample of Wheatena FREE.

☐ Check here—enclose 10c—and we'll send you a copy of the book and a Wheatena sample.

The Wheatena Corporation
Wheatenaville, Rahway, New Jersey

Name.....

Address..... H 4-29

FIGS for Health!

For centuries in all lands they have soothed with their healing syrups the delicate membranes of the digestive tract.

Delicious to the palate—a true body-building food—foe to constipation—rated highly by all authorities, they will add joyous variety to your daily diet.

Try these delicious figs at my risk and expense

Do you like those big, tender, skinless, preserved figs that are served in dining cars and clubs at 40c a portion? Would you like to get some of the same figs at a price that is only a fraction of what you paid before?

If so, I will gladly send you, at my risk and expense, a box containing one dozen 13-oz. tins of the finest figs grown; big, plump, delicious and tender. When the box reaches you, open a can—let the whole family try them as a breakfast dish or dessert. Then, if you want to keep them, just send me your check for $3.80 ($4.35 west of the Mississippi) to cover the entire shipment. If you don't think these are the finest figs you ever tasted—return the eleven remaining cans to me and you won't owe me a cent.

Send no money—unless you prefer. Don't miss this real treat; simply fill in the attached coupon and mail it now—while you think of it.

DELANE BROWN,
1527 Guilford Avenue, Baltimore, Md.

Yes, you may send me, at your expense, your special package of one dozen tins of delicious, plump figs. After trying the contents of one tin, I will either return the rest at your expense, or send you $3.80 ($4.35 west of the Mississippi) in full payment within ten days.

Name_____

Address_____

City_____ State_____

Bank or other reference_____

F. & R.'s
GENUINE
GLUTEN FLOUR

Guaranteed to comply in all respects to standard requirements of the U. S. Department of Agriculture.

Manufactured by
THE FARWELL & RHINES CO.
Watertown, N.Y., U.S.A.

F. & R.'s
GENUINE
WHOLE WHEAT FLOUR

100%
Nothing added—Nothing taken away

Manufactured by
THE FARWELL & RHINES CO.
Watertown, N.Y., U.S.A.

F. & R.'s
GENUINE
GRAHAM FLOUR

A real old-fashioned, honest-to-goodness Graham Flour; exactly like that made by Dr. Graham

Manufactured by
THE FARWELL & RHINES CO.
Watertown, N.Y., U.S.A.

The "*Patent*" Medicine Evil
Interesting facts about it in the books and pamphlets listed on page 342

Pyromania

To the Editor:—What is pyromania and what is its cause?

T. C., Pennsylvania.

Answer.—Pyromania is an intense desire to set fire to buildings and other objects. It is a form of mental aberration.

Pores

To the Editor:—I have become much interested in a certain theory about pores in the skin. Is it true that they are not openings but merely cup-shaped indentures in the skin, through which nothing (save heat and light) can pass from the outside? If this is true, how can quantities of oil or other substance apparently be absorbed by the skin? It would follow that no benefit could be derived from olive oil rubs in the case of an undernourished baby. Can poisons come from the body through the skin? If not, of what value are electric baths to cause sweating?

W. P. A., Connecticut.

Answer.—Pores are defined as "any minute orifice upon a free surface, as the opening of a sweat gland."

Myriads of sweat glands open on the surface of the skin, more numerous in some parts than in others, and these secrete the sweat and in that way reduce temperature and keep the skin moist.

Little absorption takes place through the skin but to a limited degree absorption of certain substances may take place. For example, oil placed on the skin, especially with gentle rubbing, in the case of infants is absorbed to some degree and aids in nutrition.

Mercurial ointment, especially in infants, is absorbed and this method of administering mercury is used in cases of syphilis. Certain other drugs are absorbed but only to a limited degree. When these substances are absorbed, they are not deposited under the area of the skin to which they are applied but are taken into the general circulation. The notion, therefore, that so-called "skin foods" can be applied to increase the tissues under the skin at the point at which a person is thin is wholly erroneous.

Under exceptional circumstances, a small amount of organic substance, such as urea, may be discharged through the sweat glands. The sebaceous glands, which secrete the oily material that keeps the skin moist, open just inside the mouth of the hair follicle. Electric baths, so-called, cause sweating solely because of the heat present; they are no better than heat applied in any other way.

Don't hurt your baby
with pins and buttons

The Vanta Baby Copyright 1925 Earnshaw Knitting Co.

Pins come unfastened, buttons break and turn edgewise, to torment the little body. Be sure too, mother, that your baby never can pick up loose pins and buttons and promptly put them into his mouth.

Dress your baby FOR THE FIRST TWO YEARS, the SAFE, comfortable way in

Vanta Original
No Pins No Buttons

They tie with dainty bows of Twistless Tape. Dress baby without turning.

Always fit perfectly because you can loosen or tighten the tapes in dressing. Safe, simple, comfortable, convenient for baby and mother; adjustable as baby grows; advised by doctors and nurses.

In cotton, wool, silk, linen mesh, sase, rayon fabrics, light or heavy weight as your doctor recommends.

VEST

ABDOMINAL BAND

For children over two years old we make a complete line of the finest buttoned garments.

Vanta quality

All garments are guaranteed to be non-shrinkable of the finest fabrics and best workmanship.

Ask for Vanta Baby garments at your store. If you cannot get them, write to EARNSHAW SALES CO., INC., Dept. 1200, Newton, Mass.

FREE TO YOU

Vanta Pattern, also "Baby's Outfit," a book of 64 pages on care and dressing of babies.

Earnshaw Sales Co., Inc.,
Dept. 1200, Newton, Mass.

Send free pattern and full instructions for making the new Vanta square-fold, pinless diaper. Also Baby's Outfit book and illustrated catalog, all in plain envelope.

Name_____

Address_____

City_____ State_____

The foundation of good housekeeping and *Healthful Cleanliness*

Good Housekeeping and *Healthful Cleanliness* are inseparable. Old Dutch is the foundation of both—because it embraces every element essential to cleaning ease, safety, efficiency—and *Healthful Cleanliness.*

There is nothing else like Old Dutch. It is wonderfully efficient. Because the flaky, flat-shaped Old Dutch particles possess remarkable detergent properties. With a clean, smooth sweep, they wipe away the visible dirt and the health-endangering invisible impurities. The result is—*Healthful Cleanliness.* Old Dutch is safe because it contains no harsh, scratchy grit, acid or caustic. Cleans without injury to the surface and does not harm the hands.

Old Dutch is your big help for house cleaning. Saves time. Conserves energy. Less effort is required. For example—in cleaning painted walls or woodwork. Simply sprinkle a little Old Dutch on a damp cloth or sponge—wipe gently. You'll be surprised how quickly stubborn dirt and finger prints disappear. Floors are made spotlessly clean with a little Old Dutch and a few strokes of a mop.

Old Dutch is perfect, too, for snow-white or gaily colored porcelain, bath tubs, sinks, wash bowls, tile, marble, enamel, windows, metal, cooking utensils, refrigerator, stove, etc. Preserves the modern beauty of the home. Protects the health of the family. It is economical—because a small amount does an extra lot of cleaning.

Muffins *for* Diabetics

Palatable muffins and more than thirty other foods, each strictly starch-free, may be included in your diet when you use Listers casein-palmnut Dietetic Flour.

STRICTLY STARCH-FREE

STRICTLY SUGAR-FREE

Listers CASEIN-PALMNUT DIETETIC **Flour**

is strictly starch-free, self-rising and easily made into a variety of foods in any home. Recipes accompany each carton of flour. Large carton, Listers Flour (enough for 30 bakings) . $4.85.

Sold by leading druggists, fancy grocers or direct

LISTER BROS. INC. 41 E. 42nd St. NEW YORK, N. Y.

Coming in HYGEIA

Prescriptions for Dispositions

A course in healthful amusements for children, from the runabout to the 'teen age.

Does Your Baby Talk?

When should he begin to talk? Are there ways of correcting his speech defects? This article advises you.

The Newer Vegetables and How to Prepare Them

Appetizing ways of serving broccoli, artichokes and the less common vegetables rich in minerals and vitamins.

You and I and the X-ray

How x-rays are being used for diagnosing sinus infections, treating skin diseases, etc.

Better Vacations

Get the most from your vacation in the way of health and enjoyment by heeding the suggestions in this HYGEIA feature.

Spring and summer bring their own special health problems and HYGEIA is always ready with timely information. You need not miss a single one of these splendid articles scheduled for early issues, if you send the coupon below. You may use it for a renewal or a new subscription.

American Medical Association, HA
535 North Dearborn St., Chicago

Please send me the May issue of HYGEIA and bill me for a year's subscription at $3.00.

Name .....

Address .....

Buffalo Lithia Water

To the Editor:—Is Buffalo Lithia Water of value in kidney disease?

M. B., Indiana.

Answer.—Buffalo Lithia Water was proved by government analyses to contain an unweighable amount of lithium. The government chemists also proved that the water of the Potomac River contained five times as much lithium as did Buffalo Lithia Water. Pure waters containing little mineral matter, can be used in treating diseases of the skin. The old notion that lithia was of especial value in kidney disease has long since been exploded.

Severed Tendon

To the Editor:—Can anything be done for a severed cord in the hand? My father has a crushed hand and wrist as a result of being caught between steel rollers. After three months, he has an almost useless hand; he cannot move the thumb at all as a result of the cord being cut. The doctor employed does not seem to think it worth while to try to do anything for him. I am loath to believe some sort of treatment would not benefit the cords, perhaps massage or electrical treatment. E. M. J., New York.

Answer.—A severed tendon of the thumb might be repaired if it has not endured too long and if the conditions are not such as to make a successful operation impossible. That could only be determined by a surgeon after careful examination and possibly exploratory operation.

The patient should be examined by the best surgeon obtainable, one who has given much attention to operations of the sort.

Ganglion

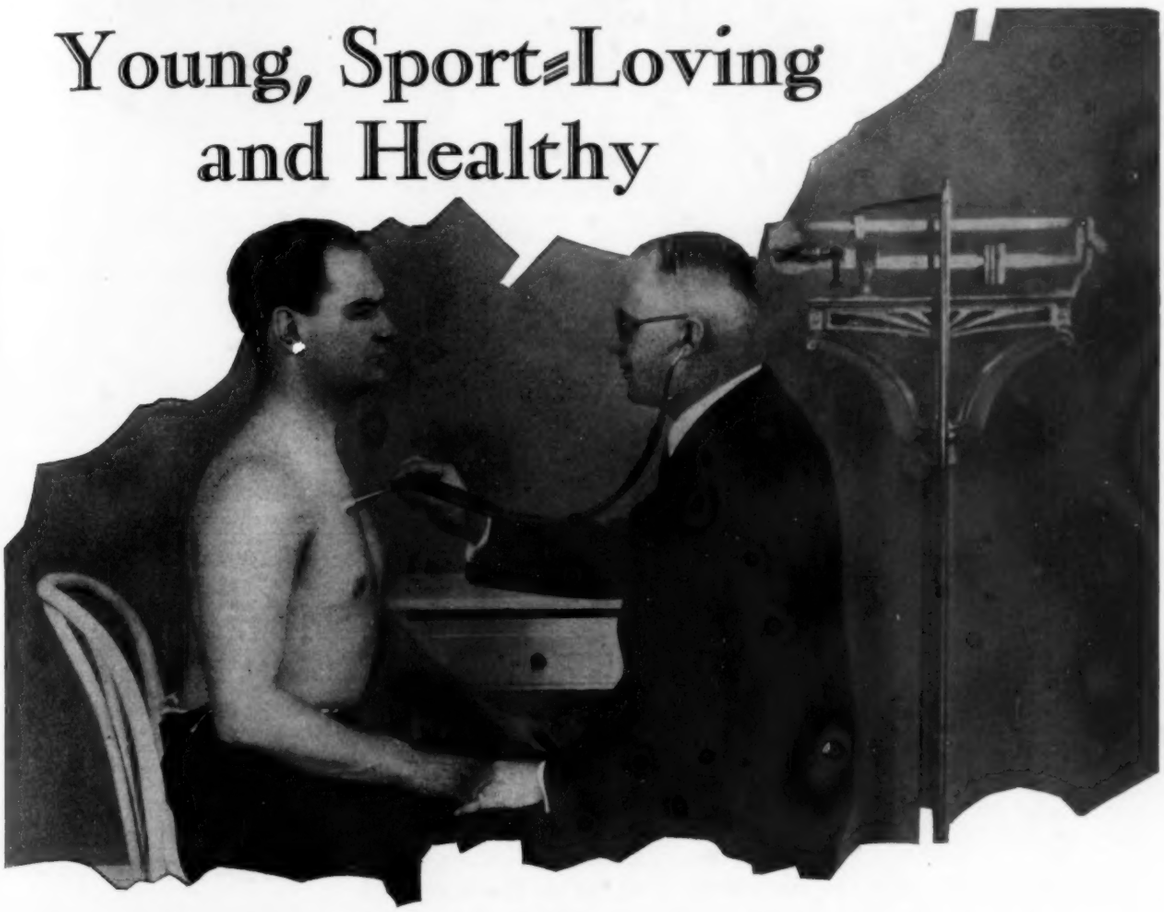
To the Editor:—My daughter has a lump on her wrist and her physician diagnosed it as due to a strain but added that the lump would always remain and she would have to wear a bandage on it. At times the arm pains to the shoulder. My daughter's tonsils are diseased. They were supposed to be removed when she was 6 years old. Would there be any connection between the two? Could that lump by any chance be a tumor, and if it is caused by a sprain, would not the lump disappear in time.

T. G., New York.

Answer.—The lump is probably what is known as a ganglion. If so, it is likely to remain indefinitely, but if it gives trouble it can probably be cured by operation.

There is probably no relation between the enlarged tonsils and this lump.

Young, Sport-Loving and Healthy



HERBERT HENDERSON is young, sport-loving and healthy. He is well educated and appreciates the scientific advances of recent years. A periodic health examination appeals to him because of the fundamental good sense of detecting disease before it has a chance to get a foothold.

Mr. Henderson does not expect the doctor's examination will reveal incipient tuberculosis but he knows that though he appears robust, he *could* develop such a condition without having cause to suspect it for many months.

Health examinations do not make one worry about one's health. On the contrary, they definitely indicate that there is nothing to worry about. Or, if disease is discovered, there is the immense satisfaction in knowing that it was found while still comparatively easy to treat.

The periodic examination of all, healthy or otherwise, by competent physicians and dentists is the surest way of reducing the cost of ill-health. No such examination is complete without the assistance of the x-ray—which sees within.

EASTMAN KODAK COMPANY, 343 STATE STREET,
Rochester, N. Y.

Gentlemen:

Please send me "How X-rays Aid the Public."

Name .....

Address .....

Armpits Dry and Odorless

MORE than a million women have found in NONSPI *(an antiseptic liquid)* the freedom you may be seeking—freedom from the annoyance and embarrassment caused by excessive armpit perspiration.

These women keep their underarms dry and odorless—save their lingerie, dresses and gowns from destructive perspiration stains—by applying a few drops of NONSPI to the underarms on an average of twice a week.

No more perspiration ruined dresses!

NONSPI, used and endorsed by physicians and nurses, does not stop perspiration. It destroys the odor and diverts the perspiration to parts of the body where there is better evaporation. NONSPI is more than a deodorant. It is an old, tried, dependable remedy that has been bringing relief and happiness to women for years. Fastidious women use NONSPI the year around—spring, summer, fall and winter.

Why suffer the mental distress? Why permit costly clothing to be ruined? It is all so needless and useless when you can keep your armpits dry and odorless and save your clothing by using NONSPI.

Get a 50 cent bottle (several months' supply) from your department or drug store today! Start using it tonight! If preferred we will mail you a bottle postpaid for 50 cents (we accept postage stamps) or will send you a testing sample free.

THE NONSPI COMPANY
2673 Walnut Street,
Kansas City, Missouri

Send free NONSPI sample to

NAME.....

STREET.....

CITY.....

How to Interest Children in Hair Hygiene

A stimulating discussion on the nature and care of the hair and scalp can be built up from our new booklet, prepared for us by dermatologists and hair experts. Free to teachers and nurses. Write us.

Leaflets and an entertaining motion picture are also available free. The picture shown is from our film.

If your druggist does not carry **Derbac**, the health shampoo, recommended by Boards of Health and of Education all over the U. S., send us his name and we will ask him to carry it, or send us 25c for 20-shampoo cake.

CEREAL SOAPS CO.
Dept. H-4, 334 East 27th St., N. Y. C.

Are You Interested in a *SAFE* and *SANE* PHYSICAL EDUCATION PROGRAM?

We advocate not "Fads and Fancies" but a practical scientific and educational program.

Why not join this Association and thus increase the possibilities for good work in physical education?

REGULAR MEMBER, $5.00
SUSTAINING MEMBER, $10.00

These memberships include the receipt of the AMERICAN PHYSICAL EDUCATION REVIEW, the only official magazine on physical education published in the United States.

Write for sample copy of the Review, application blanks and information to

AMERICAN PHYSICAL EDUCATION ASSOCIATION
Box G, Highland Station
SPRINGFIELD, MASSACHUSETTS

SUN-RAYED PURE TOMATO JUICE

Nature's Great Health Drink

Everywhere physicians and dietitians are recommending tomato juice as a valuable health drink. For years it has been prescribed for infants and growing children. Now its important Vitamins, delicious flavor and thirst quenching quality are being enjoyed by adults in increasing thousands.

Four years ago we began work in our laboratory to bring to you a tomato juice which would retain the rich, full red color, the flavor and health-giving values of fresh tomatoes. We have succeeded. "SUN-RAYED" Tomato Juice is the pure UNCOOKED juice of selected Indiana Tomatoes—sun ripened on the vines. Prepared by our EXCLUSIVE process which gives you full benefit of health-giving Vitamins A, B and C, the body-building minerals and essential fruit acids. Supplied in convenient 4 oz. bottles.

Tomato Juice is often recommended as a part of the diet in weight reduction and as a general conditioner. Write for Bulletin H-49. We will mail you a 4 oz. bottle for 15c or 10 4 oz. bottles for $1.50 post paid. **THE SUN-RAYED COMPANY, Frankfort, Ind.**

LITTLE RED RIDING HOOD OF HEALTHYLAND

In a wee little cottage a long time ago
Lived a sweet little maiden whose name you all know.
She helped her dear mother as well as she could
And played in the forest, dear Red Riding Hood.
The modern Red Riding Hood, too, loves to play,
Her health chore record she marks every day.
Fruits, vegetables, milk and crusty brown bread,
Baths, fresh air and sunshine, and early to bed.
And every fine day when she starts off to school,
Her wise mother warns her to keep every rule
By avoiding all children who cough and who sneeze.
"You'll surely outwit the old wolf called Disease."
"By your doctor's advice after clear explanation
We protected you early by immunization.
So run on, Red Riding Hood, you need not fear
Diphtheria, smallpox or typhoid, my dear."
Each Saturday after the baking is done,
A visit to grandmother's promises fun.
For grandma is keeping each health crusade rule
Which Red Riding Hood learns at her home and her school.
Every week she takes grandma a basket of food,
Fruits, vegetables, butter and brown bread so good,
Reaching grandmother's cottage, she pushes the bell
"Good morning, dear grandma, I hope you are well."
"I see that your health rules you've kept every day,
Rest and sleep are important, so are sunshine and play.
I've brought you a basket of vitamins good."
Her grandmother thanked her as grandmothers should.
"Oh, grandma, your eyes are so shining and clear."
"I'm having an oculist treat them, my dear.
My dentist is keeping my teeth sound and clean,
I have no cold or fever, my smelling is keen.
"I can hear you much better—to tell you the truth
I really believe I'm renewing my youth.
My skin is unwrinkled, my mind very sound,
No healthier grandma than yours can be found."
Then Red Riding Hood and her Grandmother Gray
Run laughing and skipping, intent on their play,
While the gaunt wolf, Disease, gives them up in despair
And goes whining and growling to hide in his lair.

MORAL

Then protect every child by good habits of health
And by immunization, 'tis better than wealth,
'Til the wolf of disease meets his fate by starvation
And leaves us a healthier, happier nation.

—*Ada E. Schweitzer, M.D.,*
Indiana State Board of Health.

I have been shipwrackt, yet am not enemy with the sea or winds: I can study, play or sleep in a tempest.—***Sir Thomas Browne.***

KEEP FIT in 15 minutes a day

OSCAR SHAW, *Musical Comedy Star, a Health Builder enthusiast.*

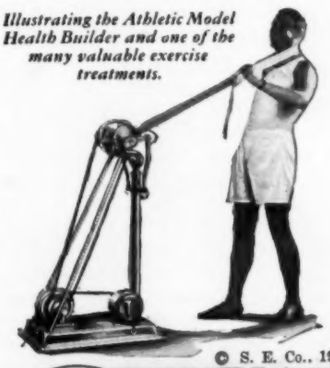
DOROTHY KNAPP, *world-famous beauty, says, "I unhesitatingly recommend the Health Builder to everyone interested in keeping radiantly healthy".*

NEVER before has health been so important an asset for business and social success as it is today. Never before has the pressure of modern living put such a strain on physical condition. You simply *must* **KEEP FIT**—without waste of time or effort.

Oscillate Your Way to Health

There is only *one* way to keep fit—DAILY physical exercise. Science now makes this possible, and in a most enjoyable, simple new way. Just 15 minutes a day of invigorating massage and vibratory-exercise with the famous Battle Creek Health Builder, manufactured under the patents of Dr. John Harvey Kellogg, awakens each tiny capillary into new activity, stimulates the perspiratory and sebaceous glands, vigorously massages the heaviest muscles, helps eliminate dangerous body poisons, and quickly reduces weight in any part of the body desired.

Illustrating the Athletic Model Health Builder and one of the many valuable exercise treatments.



© S. E. Co., 1929

The Result of Years of Development

No other appliance can produce the same effects as the Health Builder. Improved year by year, as a result of long study and research by an eminent physician, the action of the Health Builder is perfectly synchronized with human muscle tone.

A Health Builder for Every Requirement

Ideal for home use is the Universal Home Model, a compact enclosed Health Builder. The Athletic Model is very popular for clubs, home gymnasiums, colleges, health centers, institutions, steamships, etc., while the handsome De Luxe Cabinet Models combine utility with distinctive beauty.

Health Facts for You—FREE!

Send at once for "Keeping Fit in Fifteen Minutes a Day"—a valuable FREE book showing how the Health Builder keeps you fit. Health should come *first!* Write for your copy—NOW!

Sanitarium Equipment Co.
Room AM-1857 Battle Creek, Mich.

Choice of 80,000 Because Medically Correct

The Battle Creek Health Builder *Keeps You Fit!*

Healthful Exercise Makes Sturdy Children

Active play gives children rosy cheeks and sparkling health! Children of all ages get just the exercise they need on

THE TRADE MERREMAKER MARK

Combines the three greatest plays of childhood—Slide, Teeter-Totter and Merry-Go-Round. **Keeps Children Off the Streets.** They change from one play to another without help. Sturdily constructed for long service.

6-Play Gym

Combines:

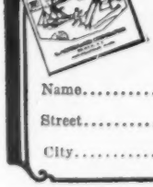
1. Swing
2. Trapeze
3. Flying Rings
4. Horizontal Bar
5. Teeter-Totter
6. Circus Climber

Several children can play on this wonderful complete gym at the same time. Can be used either indoors or outdoors the year 'round. Fun galore and healthful exercise for boys and girls of all ages.

Complete New Catalog

Many other pieces of Merremaker Home Playground Equipment are shown in our beautifully illustrated new catalog. New, LOW PRICES on this high grade equipment are surprisingly reasonable. Send coupon below for FREE catalog and prices.

MAIL THIS COUPON TO-DAY!



THE MERREMAKER CORP.,
744—8th St., S.E.,
Minneapolis, Minn.

Please send me FREE, your beautiful new catalog and NEW, LOW PRICES on all Merremaker Home Playground Equipment.

Name.....

Street.....

City..... State.....

FASTING ALTERS BLOOD CHEMISTRY

Prolonged fasting may give rise to serious symptoms of illness, according to investigators who have experimented extensively on animals. They have found that the chemical composition of the blood is strikingly altered during fasting and that the changes resemble those seen in intestinal obstruction and other serious conditions.

The opinions and tenets of persons who believe and preach that fasting is a panacea for practically any disease are usually uncritical, without scientific basis and founded largely on subjective impressions, observes *The Journal* of the American Medical Association. These advocates often acquire considerable following partly because of their personalities, but also undoubtedly because of the novelty of the procedure and the fact that it is simple and inexpensive.

Laboratory workers have shown that the bones of animals with rickets will heal if the animals are deprived of food for a time. This healing is brought about by added phosphate which is deposited in the blood from the breakdown of muscle tissue. At the same time, however, there is evidence that the excess phosphate may cause tetany, a disorder that occurs with diseases of the stomach and intestines and after exhausting diseases. These studies emphasize the dangers of indiscriminate fasting without considering the many factors in the conditions being "treated."

The effects of wholesale undernutrition on European countries during the World War are appalling, *The Journal* comments. Bodily activity has been curtailed and the entire mental outlook altered. Certain diseases decreased as a consequence of the reduced rations, but others greatly increased, producing an inestimably deleterious effect on the people.

"GROWING PAINS" WARN OF HEART DISEASE

"Growing pains" in children may be the signals of heart disease, Dr. C. G. Kerley writes in *The Journal* of the American Medical Association. In his practice among children Dr. Kerley has observed that they showed these warnings months or even years before heart disease developed.

Children who complain repeatedly of tired legs, of muscle pains and stiffness, pains in the extremities day or night, should be under the care of a physician. Two other conditions that are frequently followed by heart disease are rheumatic fever and St. Vitus' dance, technically known as chorea.

Snuggle Rug

for Convalescents and Invalids

JUST "Zip" it and you are completely enclosed yet there is ample room to move limbs freely. You don't have to be "tucked in" and it can't become unwrapped.

Snuggle Rugs are made of warm, woolly fabrics in attractive plaid designs in either bright or subdued colors. They are fitted with the Talon slide fastener which opens straight up the front. This is a quality garment of finest materials and workmanship from which you will derive much future comfort for motoring, steamer use, football games and other purposes.

Snuggle Rugs retail at $12.50 and $16.50 (depending on quality of material) at the better shops.

We will be pleased to supply you direct prepaid, subject to your approval, upon receipt of your remittance.

SNUGGLE RUG CO.
211 N. 7th St., Goshen, Ind.

STOP

Thumb-Sucking
JUBILEE BABY ARMLET
Aluminum—Adjustable

$1.00 Pair
Also corrects Nail-Biting

A safe, easy, kindly way. Invaluable if suffering from Eczema or other skin disease. Allows free movement, even considerable bending of elbow. Loose fitting, light, sanitary, cool. Snap fasteners, adjust to 5 different sizes. Handy. At drug or surgical supply houses, or postpaid on receipt of $1. If more convenient, order C.O.D. and pay postman $1.10 on delivery.

JUBILEE MFG. CO., 21 Sta. C., Omaha, Neb.

MEDICATED VAPORS

RECOMMENDED BY PHYSICIANS

for the inhalation treatment of coughs, colds, asthma, croup, laryngitis and all bronchial ailments. The modern, safe, convenient method of administering inhalations is the

AMERICAN ELECTRIC VAPORIZER

Safe, sure, instant vaporization of any solution with this clean, dependable equipment.

Steam or vapor may be directly inhaled or placed anywhere in room. No flame. No danger. Automatically shuts off when evaporation is complete.

$3.50 complete with attachment plug.

At any drug store, surgical supply house, or direct from

AMERICAN SUNDRIES COMPANY
116 South Portland Avenue Brooklyn, New York

Representatives Wanted • Write Hygeia

LAUNCH STUDY OF CARE OF CHRONIC SICK

A study of the care of the chronic sick in New York City has been undertaken by the Welfare Council, a bulletin announces, to appraise the needs of those who constitute a community problem and the extent of New York's facilities for serving them.

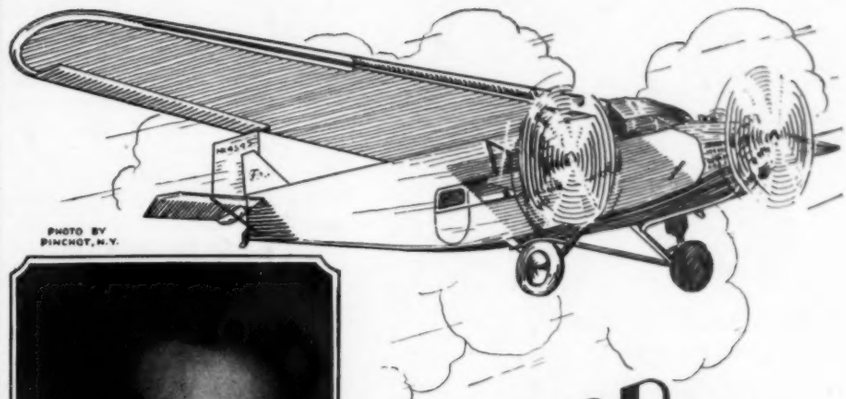
Three main classes of chronically ill persons are found and they require care from three different points of view. The chronically ill child obviously has needs different from those of the aged sick. The person stricken with chronic illness during the productive years of his life has duties and responsibilities that do not apply to children and the aged.

Pulmonary tuberculosis, mental disease, deafness and blindness will be excluded for the reason that highly specialized services have been developed to deal with them. Among the important forms of chronic illness that will be included are heart disease, cancer and other tumors, arthritis, organic nervous diseases, arteriosclerosis, nonpulmonary forms of tuberculosis, infantile paralysis, venereal disease, diabetes, drug addiction and alcoholism.

From this survey it is hoped to round a program that will include chronic disease hospitals, custodial institutions, homes for the aged, general hospitals, visiting nurse associations, social service in clinics and dispensaries, family welfare, boarding homes, sheltered workshops and special committees such as those for crippled children.

AFRICAN NATIVES ESCAPE HIGH BLOOD PRESSURE

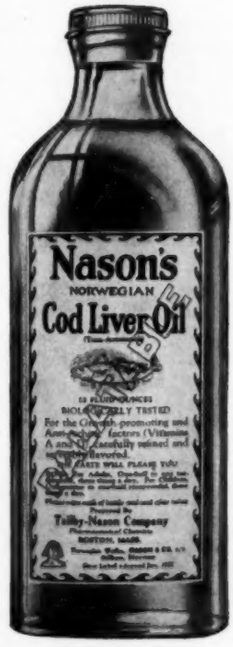
Work and worry are popularly supposed to bring about the high blood pressure that is so prevalent among American and European business men past middle life. Support is given to this opinion by a study of 1,000 African negroes made by a British medical officer in East Africa and reported in the *Lancet*. Until they are about 40 years old, the Africans have average blood pressures not notably less than average Americans or Europeans. But after that period, in the years when the American executive has to cut down on strenuous exercise and be careful of what he eats, the blood pressure of the African gradually decreases. Final conclusions cannot be drawn, but it is interesting to learn that the natives who spend their declining years sitting in the sun and doing nothing appear to escape the high blood pressure danger of their civilized contemporaries.



BYRD ANTARCTIC EXPEDITION

Carries **Nason's Cod Liver Oil**

to the South Pole



THE Tailby-Nason Company feels highly honored that Nason's Cod Liver Oil met the exacting requirements of the Byrd Expedition and is now at Commander Byrd's headquarters at Ross Bay, in the Antarctic, near the former headquarters of Amundsen the Norwegian explorer.

Nason's Cod Liver Oil has already visited the far North with Donald B. MacMillan, who with his comrades lived for many months in the frozen Arctic.

Here the vitamin-potent Nason's Palatable Cod Liver Oil was used as a supplement to the diet during the long winter months when the sun was absent.

Even in more kindly zones, few people, young or old, enjoy sufficient sunshine to develop a plentitude of vitamin D in the body and therefore turn gladly to Nason's Palatable Cod Liver Oil as a rich and convenient source of this needed health element.

Send coupon for sample bottle and proof of vitamin potency

Nason's
Palatable - Norwegian
Cod Liver Oil
The Better Tasting Kind

TAILBY-NASON COMPANY
Kendall Square Station, Boston, Mass.
Pharmaceutical Manufacturers to the Professions of Medicine and Pharmacy since 1905.

Gentlemen:—You may send me (without charge) sample bottle of Nason's Palatable Cod Liver Oil.

Name .....
Address .....
My Druggist's Name .....
(H.4-29)

Willie's oily cocktail

Father struggled with the lemon squeezer—mother tried to be helpful, but all to no avail, for old-fashioned castor oil refused to be disguised. Uncertain camouflage is gone forever. Most parents now know of Kellogg's Tasteless Castor Oil.

In Kellogg's the taste isn't covered up—it simply isn't there. It contains no benzyl alcohol, saccharin or flavoring. Super-refined by a patented process and the *only* refinery-bottled castor oil. This keeps it 100% pure, tasteless—untouched from refinery to you.

KELLOGG'S
The Original
TASTELESS
Castor Oil
THERE IS NO SUBSTITUTE FOR
PURITY

To protect its purity and freshness it is never sold in bulk but always in the original bottles. 1 oz. (1 dose), 3 oz. and 7 oz. home-sizes. Send 10c in stamps for trial bottle.

Tested and Approved 1927 Bureau of Foods, Sanitation and Health GOOD HOUSEKEEPING MAGAZINE

Sold by all druggists.

Walter Janvier, Inc., 121 Varick Street, New York

CALLS X-RAYS MAGIC EYES TO PENETRATE MATTER

Every one is familiar with the medical uses of x-rays. Broken bones are examined, ailing teeth are located and diseased lungs are diagnosed almost every day among one's acquaintances. Not only do the x-rays yield absolute information for fractures and diseases of bone, but also for tuberculosis, tumors, gallstones, blocking in the spinal column and all the long list of ailments to which the human body is heir.

In other branches of science x-rays are an invaluable research agent. The biologist and botanist study the evolution of species and effect astonishing accelerations in growth of fruit flies or tobacco plants by irradiations. The physicist uses x-rays to explore the infinitesimal subdivisions of matter. The chemist is discovering new chemical elements by their use. Industry is finding them of immeasurable assistance in the solution of its knottiest problems. The ills of inanimate things like metal castings, golf balls and telephone poles are being diagnosed as successfully as those of human beings.

But what are these versatile, mysterious invisible rays themselves? Prof. George L. Clark of the University of Illinois, writing in the *Scientific Monthly*, calls them magic eyes, the messenger by which the student gains knowledge of the structure of matter and the interrelationships of its ultimate constituents.

X-rays are identical in every respect with ordinary light except that the wavelengths are only 1/10,000 as great on the average as those of visible light, Dr. Clark explains. They are electromagnetic vibrations propagated as waves or as tiny bundles of radiant energy through space without transference of matter.

X-rays are only a part of the great range of rays varying from those only 1/100,000,000 cm. long to those hundreds of meters long used in radio broadcasting. X-rays, the gamma rays from radium, the ultraviolet, the infra-red and radio waves are all like light except in wave length.

It is because x-rays are shorter than light rays that they are more penetrating and therefore pass through objects opaque to light. The observation of bones through the less dense tissues is the most familiar example of this penetration. Dr. Clark says that radiographs of the skull are so accurate and individualistic that they will soon supplant finger prints as a method of identification. Knowledge of ancient anatomy is chiefly

"The Bathing Beach on Your Lawn"

A portable canvas pool with water spray and depth regulator—water supplied and drained through a garden hose. We will be glad to send particulars.

The American Wading Pool Co.
801 Wabash Bldg. Pittsburgh, Pa.

For those wayward thumbs

This soft, pliable, kindly little binder, fastened gently to baby's active chubby arms, does just what it is intended to do and no more—keeps the thumb or finger from quite reaching the mouth, and does not hamper movements or play in any other direction. Children become immediately accustomed to it and it is a wholesome way to ward off the whole train of baby ills—facial deformities, respiratory and throat troubles—that come with the thumb-sucking habit. Help your baby—try a

BOWERS KANT-FAYL ANTI-FINGER SUCKING DEVICE

If your dealer cannot supply you, order from us. Per set, $3.00

Little Rock Surgical Company
Donahey Bldg. LITTLE ROCK, ARK.

CAMP
TRADE MARK

Maternity Supports

Scientifically designed in types of models for all figures, gives low abdominal uplift with no constriction.

Special feature—Original patented adjustment supplying sacro-iliac support and easy regulation to size and pressure as required.

Wonderful reaction to normal health, and mental and physical buoyancy.

Write for special information.

S. H. Camp & Co.
Jackson, Mich.
Mfgs.

Fisher & Burpe, Ltd., Manufacturers for Canada
Winnipeg, Manitoba

Make Money in Spare Time

Representatives for Hygeia are wanted in every community. Generous commission. Send for full details.

derived from radiographs of Egyptian mummies. The discoveries concerning obscure diseases, especially cancer, too often unsuspected until far advanced, constitute the best of arguments for regular x-ray examinations even in good health, he adds.

Research in x-rays has always the background of higher standards, greater knowledge, the diagnosis and alleviation of ills of every kind. It is little wonder, then, Dr. Clark concludes, that the worker is kindled with a burning enthusiasm that drives him on to new fields of application for this new science as mankind learns to use it in the cause of better knowledge, better material and better health.

CHILD PSYCHOLOGY OF THE MIDDLE AGES

Child study is not an exclusive product of the modern scientific age. The following aphorisms, quoted in the *News Letter* of the Minnesota Board of Health, are from a fifteenth century writer:

"Good mental habits are corrupted by bad habits in relation to food, drink and exercise, by what is seen and heard and by bad music.

"Children who have been ailing for years, through bad mental habits, are cured by giving an opposite direction to the workings of the mind.

"Inordinate mental emotion in small children should be strenuously prevented, wherefore the nurse should be prudent and expert as to the child's habits.

"There are three ways of lightening the pangs of infancy: to give it the breast, gentle handling and a pleasant modulation of the voice."

SCIENCE LIGHTENS RULES OF QUARANTINE

Quarantine for communicable diseases does not have the meaning today that it had ten, twenty or even thirty years ago. The development of immunization procedures has taken much of the discomfort out of the stringent arbitrary regulations that used to obtain.

Modern medical science has discovered for many diseases methods for ascertaining exactly when a sufferer ceases to be dangerous. As a result the modern application of quarantine is based on scientific fact and imposes no greater hardship than is absolutely necessary. It merely selects the person who may be a menace to health and prevents his contact with others until he is no longer dangerous, Dr. Walter M. Dickie, state health officer of California, explains in the bulletin of his department.

New facts about CLEANING TEETH

DO YOU KNOW....

that there are thousands of tiny crevices in healthy, normal teeth and gums?

that no toothbrush can get down into these microscopic places?

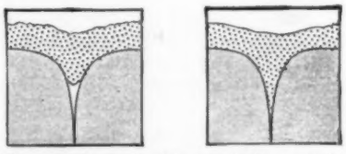
that food particles and mucin deposits lodge in these crevices and may start decay?

that the real test of a toothpaste is its ability to cleanse these crevices?

A REMARKABLE scientific discovery has recently brought to light some new facts about cleaning the teeth.

A scientist carefully measured the power of toothpastes to penetrate the tiny crevices in teeth and gums where food particles lodge and where decay begins.

He found that some dentifrices merely scrub the outer surface of the teeth. Others go partly down into the larger crevices. *Then he discovered that Colgate's has a higher penetrating power than any of the leading dentifrices on the market today.*



How Colgate's Cleans Where The Toothbrush Cannot Reach

Greatly magnified picture of tiny tooth crevice. Note how ordinary, sluggish toothpaste (having high "surface-tension") fails to penetrate down where causes of decay may lurk.

This diagram shows how Colgate's active foam (having low "surface-tension") penetrates deep down into the crevice, cleansing it completely where the toothbrush cannot reach.

This is the secret of Colgate's remarkable ability to clean—it gets down deep into the hard-to-clean places where the toothbrush cannot reach.

Colgate's superior penetrating power is due to the fact that it contains the world's greatest cleansing agent. When brushed, this cleansing agent bursts into a sparkling, snow-white foam that sweeps over teeth and gums. This foam possesses a remarkable property (low "surface-tension") which enables it to go deep down into the tiny tooth crevices where decay starts. There, it dislodges clinging food particles and mucin, washing away these impurities in a detergent wave.

In this foam is carried a fine chalk-powder—a polishing material used by dentists—which polishes the enamel safely, brilliantly. Thus Colgate's cleans and beautifies; purifies and refreshes the entire mouth restoring natural loveliness of teeth and gums.

Try Colgate's *one week* FREE

COLGATE, Dept. B-1798
595 Fifth Avenue, New York, N. Y.

Please send a free trial tube of Colgate's Ribbon Dental Cream, with booklet "How to Keep Teeth and Mouth Healthy."

Name.....

Address.....

Baby "Sees Out"

Mother Drives Without Distraction!

PERHAPS there might never have been a "Comfy-Safe" Auto Seat if it hadn't been for one baby's daddy wishing to take baby to grandmother's at a time when no one could conveniently accompany them.

Happy and Secure in a "Comfy-Safe" AutoSeat

Now, with the "Comfy-Safe" locked to the auto, and baby securely but comfortably held in its specially designed safety strap with adjustable shoulder harness and belt, baby can be taken safely in any car, even when unattended.

Note long curved hook which reaches down back of the car seat and clamps tightly; note also diagonal rods which double lock this in place.

Locks to any car, front, rear or coach seat. At leading dealers, $5.50

Made by the makers of the famous "Little Toidey" toilet seat and "Toidey" Steps.

Write for more information!

Juvenile Wood Products, *Inc.*

Gertrude A. Muller, Pres.

Box L FORT WAYNE, INDIANA

URGING CARE IN CHOOSING CHILD'S PLAYTHINGS

Toys have long been considered inconsequential things to be given to children to keep them out of mischief, as stop-gags and time killers, says Edith London Boehm in a recent issue of the *Playground*. The old order of thinking has changed, however, and toys are now regarded as definite and valuable tools for child training.

Toys are the child's working apparatus and he goes from toy to toy trying out his creative powers, his imitation of adult activities. They educate him as nothing else can. Therefore his collection should be varied enough to let him try out a large range of life's activities.

The toy purchaser finds little help in the average toy department, even when the material is supposed to be educational, observes Mrs. Boehm. Arts and craft materials, for instance, supply small, intricately lined post cards to color with an infinitesimal amount of paint, an almost invisible paint brush and crayons that break at the first stroke. Reading boards on which individual letters are used are still sold although methods of teaching reading changed years ago.

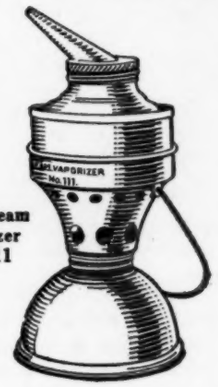
Raw materials are the best means of expression, however crude. Large jars of paint, large sheets of paper, thick brushes and sturdy crayons that can be grasped by unsteady fingers are what the little child needs. Simple serviceable blocks that may be a house today, a train tomorrow and a chair the next day are far better than an intricate set with a limited adaptability.

It is possible to buy excellent toys, Mrs. Boehm says, but the buyer must exercise studied choice. He must consider the age and abilities of the child and the wearing qualities of the toy. There are dolls that are esthetic, unbreakable and washable and there are simple construction sets. Price has little to do with value in toys. An expensive toy may be less durable than one of little cost.

Remember, the outlook for the next generation of adults in the struggle with tuberculosis rests in the protection and education we insure to the children of this generation.—*Dr. Henry B. Jacobs.*

I solemnly warn my fellow countryment that you cannot maintain an A-1 empire with a C-3 population. You cannot bring up healthy people in unhealthy homes.—*Lloyd George.*

For Children, Too!



Atlas Steam Vaporizer No. 111

Very practical for use in treatment of coughs, colds, whooping cough and croup. Produces a warm medicated vapor for inhalation; especially adaptable for treating children.

The DeVilbiss Company
Toledo, Ohio

INVALUABLE AID *In Relieving Pain*

The "OVR-NITE" HEATING PAD

(*Reg. U. S. Patent Office*)

Prepared with one ounce of hot water. Stays hot 15 hours

Its soothing heat quickly reaches the spot and relieves the pain.

The "OVR-NITE" Heating Pad is invaluable in relieving pain in Neuralgia, Neuritis, Ordinary Tooth-Aches, Menstruation and other conditions where heat is required.

Ready for use almost immediately on addition of the water. Retains a temperature of 170 to 175 degrees for fourteen hours.

It is soft and pliable and can be comfortably applied to any part of the body.

There is no possibility of leakage with the "OVR-NITE" Heating Pad. It stands the test of usage and age. 135 hours' heat guaranteed. Pad with washable rubberized cloth cover, $1.00, sent prepaid on receipt of remittance. Additional pads without rubber cover, 60c, sent prepaid.

THE BAG-O-HEAT CO., Not Inc.
Sole Manufacturers
201A Traders Bldg., 309 S. LaSalle Street, CHICAGO

Representatives Wanted
Write Circulation Dept. of Hygeia

PROPOSE NEW RESEARCH ON DEAFNESS

A broad program of research into the problems of the deafened was proposed at a meeting of scientists in Washington, D. C., in February under the auspices of the National Research Council. The efforts of the psychologist, the physicist, the neurologist and the physiologist would be combined in this labor designed to aid the deaf and hard of hearing to surmount their handicaps.

Resolved into concrete factors, the program outlined includes surveys of teachers of the deaf, their methods and results obtained by different methods; investigation of industrial training in schools for the deaf as compared with the occupations actually pursued by them and a comprehensive survey to determine the types of hearing defects.

The deafened child will be especially studied. At present schools for the deaf take children at the age of 7 or 8. This is regarded as a dangerous gap in the educational program in the light of the stress now being placed on the significance of the early years in general development, the committee believes. It is hoped to attack this problem through the establishment of a nursery school for deaf school children; the development of adequate tests of hearing for young children; tests to prevent the unfortunate but frequent confusion of deafness with feeblemindedness and a study of the factors that cause hearing defects in young children.

WHY LAW REQUIRES CARE OF INFANTS' EYES

Any baby under two weeks old with sore eyes, eyes reddened or inflamed or discharging pus is in danger of going blind. There are several different kinds of germs that may get into a baby's eyes at birth that will destroy the sight unless proper and immediate precautions are taken. One particular organism works so quickly that a delay of only a few hours in treatment may result in blindness.

This urgent message was broadcast in a radio talk by Dr. Elizabeth M. Gardiner of the New York state department of health. It explains why state laws require that any person who knows a child has sore eyes must report the fact to a physician or a health officer immediately. No one is permitted to put the necessary healing preparation into the child's eyes except a physician, nurse or midwife, but any one having the care of a new-born baby is obliged to see that help is brought in time to save the sight.

After shopping

A day in crowded stores . . . an exhausting trip home on cars or train . . . dinner to get . . . You simply can't do it!

When you come in from shopping, drink a glass of Horlick's Malted Milk. You feel stronger immediately!

"Horlick's" concentrated energy restores *your* energy . . . stimulates your nerves. As good as half an hour's nap!

You can mix up a glass of "Horlick's" (natural or chocolate flavor) in a few seconds. Send for free sample and speedy mixer (see coupon below) *today.*

Convalescent?

How you crave a new flavor in your diet!

Horlick's Malted Milk supplies that "different" taste—malty, refreshing . . . And it gives you, in easily digestible form, the precious, body-building nourishment you need. Physicians have recommended it for nearly 50 years.

"Horlick's" (natural or chocolate flavor) can be used in so many tempting ways. Drinks, hot or cold . . . soups . . . desserts . . . on cereals.

Send coupon below for free sample and speedy mixer, today.

On cereals

You coax. You scold. You play a game. Still Sister doesn't eat her cereal!

Why not try this healthier method? Sprinkle it with Horlick's Malted Milk, (natural or chocolate flavor).

"Horlick's" supplies not only the sweet of pure malt sugars, but it is an aid to digestion. It contains the proteins, minerals, vitamins necessary to child health. Physicians have recommended it for nearly 50 years.

Send coupon below for free sample and speedy mixer, now.

Restful sleep

Frayed nerves . . . a rundown physical condition . . . These break your sleep.

Insure your nights against sleeplessness by taking a glass of Horlick's Malted Milk—preferably hot—before retiring.

Its warmth is relaxing. It calms the nerves. It is quickly digested . . . You sleep . . . the night through . . .

Take a glass of "Horlick's" (natural or chocolate flavor) every night before you go to bed. Send coupon below for free sample and speedy mixer.

THE ORIGINAL MALTED MILK

HORLICK'S

FREE TRIAL PACKAGE

HORLICK'S MALTED MILK CORP.
Dept. F-17, Racine, Wis.

Tear out and mail this coupon for sample package. Check flavor wanted.

For Speedy Mixer, the improved method of mixing a creamy Malted Milk *in a glass,* enclose 4 cents in stamps for postage.

☐ Natural ☐ Chocolate

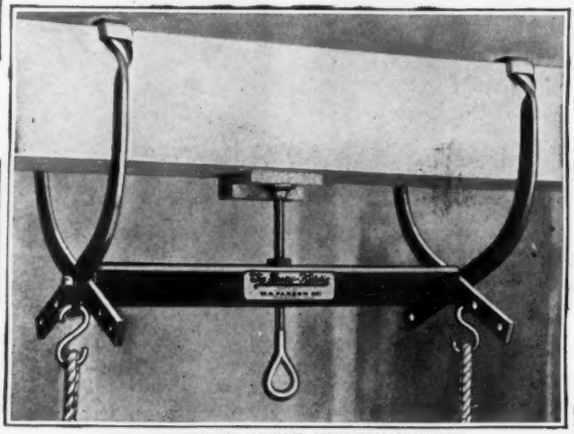
Name .....

Address .....

(If you live in Canada, address 2155 Pius IX Ave., Montreal)

Horlick's, the original Malted Milk, is sold in both natural and chocolate flavors, in powder or tablet form

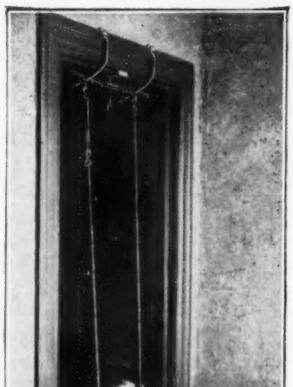
EXERCISE!



THE PATENTED "BUSY KIDDIE" HANGER

The patented "BUSY KIDDIE" Hanger turns any doorway into a gym. It clamps on to the door trim without marring the woodwork and does away with treacherous, unsightly screw eyes. It is tested to 350 lbs. Swing, spring exerciser, trapeze, and flying rings can all be hooked on to one and the same Hanger—as desired. Fastened and released by a turn of the thumb screw in the middle.

PATENTED SO THERE IS NOTHING LIKE IT



"BUSY KIDDIE" SWING

How inviting the swing looks and how it makes the time fly in healthy fun. In lower right and left hand corners are children on "BUSY KIDDIE" trapeze and rings, building muscle and health, while keeping joyously occupied.

A Close-up of the "Busy Kiddie" Exerciser

"BUSY KIDDIE" EXERCISER

And if the grown-ups are getting soft of muscle and possibly a little too hefty, just buy a pair of our spring exercisers, snap them to the children's "BUSY KIDDIE" Hanger, and go to it—the cut shows the hook-up.

"BUSY KIDDIE" TRAPEZE

The "BUSY KIDDIE" is unique, not only on account of its patented Hanger; but principally because it can be used by the whole family—from three years up, to be exact—to build strength, health and character.

One "BUSY KIDDIE" set lasts indefinitely. Sold by Department, toy and sporting goods stores, or direct.

Ideal As a Gift the Year Round

DON'T PROCRASTINATE
WRITE FOR FREE FOLDER TODAY

Standard Pressed Steel Co.

JENKINTOWN, PA. Box 503

"BUSY KIDDIE" RINGS

FIND BREAST FEEDING AIDS MENTAL GROWTH

Breast-fed babies were found to be definitely superior mentally and physically to those artificially fed, in a study made by two Chicago investigators and reported in *The Journal* of the American Medical Association.

Much has been written on the advantages of breast feeding during the child's first two years, but this is said to be the first investigation bearing on the later physical and mental development of the babies.

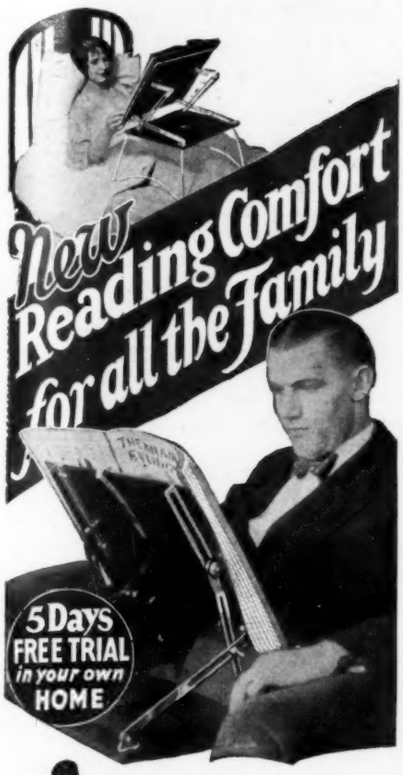
Children who were artificially fed ranked lowest in all the physical traits measured except height, which did not appear to be influenced by the type of feeding. Measured by standard indexes devised by nutrition workers, these children were the most poorly nourished group. In learning to walk and talk they were the slowest of the group. Furthermore they were most susceptible to the diseases of childhood. There was no immunity to any special disease.

Even more startling is the observation that breast-fed babies have on the average a better chance to develop a high degree of intelligence than those artificially fed. But a note of warning is inserted in the investigators' conclusions. From their evidence it appeared that children who were fed on breast milk longer than nine months were mentally the poorest group of all the children studied. Those who were breast-fed from four to nine months were definitely superior to all others. These results substantiate the medical opinion that auxiliary feeding of infants should be begun by the ninth month.

GOOD FEET MEAN GOOD POSTURE

The wearing of extremely high heels has a bad effect on posture and spoils the shape of the leg because the muscles are pushed to the back of the calf. The muscles in the upper part of the leg are not exercised and those in the lower part are overexercised. In addition to these defects the bones of the pelvic region were found to be tilted 40 per cent in a group of 368 girls examined in schools in Ames, Iowa.

Of forty-two girls who wore high heels, thirty-six walked with their necks bent forward, thirty-two had protruding abdomens and all forty-two had an abnormally narrow curve between shoulders and hips. Posture in every instance was better in bare feet than with high heels. Eighty-nine per cent of the girls who had good feet had good posture.



CHILDREN are enabled by the Mitchell Table to sit upright. Harmful humping eliminated.

INVALIDS especially appreciate the Mitchell Table. Permits them to read without eye-strain—to eat comfortably.

PROFESSIONAL MEN now read, write and edit in their coziest chair.

A Dozen Uses in Every Home

Ease and Relaxation Never Felt Before

DO YOU like to read? Then here is a new convenience—a new delight! The Mitchell Table holds your book or magazine in exactly the right position for comfort. Arm-strain, muscle-strain, eye-strain are all removed. Now you can read **for hours** with perfect comfort and relaxation. A lifelong investment in **health** worth many times its original cost.

Dozens of Uses

Here at last is a means of reading and breakfasting **comfortably** in bed. Children, using the Mitchell Table in their studies, sit upright and breathe properly. Humping, with its **harmful effect on lungs, heart, liver and stomach,** is eliminated.

An ever-appreciated ray of sunshine in the lives of invalids—a portable "desk" that allows you to write, sketch or draw comfortably in bed or in your coziest chair. A distinctive gift that never fails to arouse enthusiasm.

Made to last a lifetime—the Mitchell Table is the **simplest** and **handsomest** made. Two easily adjusted thumb nuts control all positions of the panel. Attractively finished in mahogany or walnut. Artistic design on panel lends grace and richness. Folds flat when not in use. **Metal supports for bed use and book clips included without extra charge.**

Five Days' Trial—No Money Down! Send us the coupon below and we will gladly mail you a Mitchell Table postpaid. Use it in your own home; see for yourself its advantages. Keep it only if absolutely satisfied. $6.50 is a small price for lifelong reading comfort, isn't it? Send in coupon today.

MITCHELL MOULDING CO.
Dept. 904, Forest Park, Ill.

You may send me, postpaid, a Mitchell Lap Table in ☐ Mahogany Finish ☐ Walnut Finish on trial. Five days after receiving it, I will either return it or send you $6.50. ☐ Check here if holly box is desired.

Name.....

Street Address.....

City..... State.....

Canada: National Traders' Corp., Montreal

Folds flat when not in use

Easier to handle than a mattress . . . . far more sanitary . . . by all odds more comfortable

The days of your heavy, clumsy mattress are numbered. Spring-Air is here to convince you that it is more wonderful than any mattress can possibly be. Actually, to handle this new bed-cushion is but child's play. The removable cushion covers can be cleaned like the rest of your bedding. Spring-Air is forever fresh, always renovating itself. You can't wear out the life or shape. Indeed, Spring-Air has stepped so far beyond the limitations of the old-style mattress that the output for our first two years was entirely taken by over 600 of the most prominent hospitals and hotels. Why they enthusiastically endorse Spring-Air is explained by the free book, "Sleeping Relaxed," which the coupon brings.

Makes You Sleep Relaxed

Amazing as are its practical advantages, your greatest thrill will come from the comfort of Spring-Air. It will make you sleep more comfortably than ever before in your life. It will invigorate you with a new feeling of vitality and poise. All because the patented construction of this bed-cushion compels your body to sleep relaxed. We know this sounds too good to be true and so we ask that you sleep on Spring-Air for ten nights at our expense. Not one penny will it cost you to personally discover the benefits of Spring-Air. You will not be urged to buy; simply decide for yourself if your present mattress can be tolerated once you have slept on Spring-Air.

You Can Save $20 Now

Now, while we are directly introducing Spring-Air on a free-trial basis, the price is considerably below what dealers would charge. Soon this price will be raised. Now is the time to save more than $20 by returning the coupon today.

CHARLES KARR CO.
Holland Michigan

Spring-Air

CHARLES KARR CO., H 429
Holland, Michigan

Dear Mr. Karr: Send me, without the least obligation, your free book, "Sleeping Relaxed," and your free trial offer.

Name.....

Address.....

City..... State.....

Clapp's
ORIGINAL APPROVED
BABY SOUP
AND
STRAINED
VEGETABLES

The Badge of Health Foods
In Glass Jars

For Infant Feeding

TO SUPPLEMENT THE MILK DIET

Prescribed by over 5,000 Specialists—

Because they are scientifically prepared under surgical standards of cleanliness and supply the elements needed for sound growth.

Because they cost less than if made at home and save a Mother at least 24 hours a week kitchen time and give her these extra hours to be out of doors with baby.

Because they are easily carried, keep indefinitely when sealed, are ready to use except for diluting and heating and so are equally convenient for feedings at home or traveling.

Clapp's Baby Soup. An appetizing combination of Beef Juice, Vegetables and Cereals.

Clapp's Wheatheart Soup, a combination of Vegetables, Cereals, and the Wheat Germ which supplies Food Iron and VITAMINE D abundantly.

Clapp's Strained Vegetables

Spinach, Carrots, Asparagus, String Beans, Peas, Beets, Tomatoes, Prunes and Apricots.

Are all scientifically prepared from carefully selected materials, especially for growing babies and are immensely liked by them.

These are simply wholesome, healthful foods, packed for convenience and economy in 4 oz. glass jars—Soups, also in 14 oz. jars.

Ask Your Doctor
and write us for your Dealer's name
HAROLD H. CLAPP, Inc.
1340 University Ave., Rochester, N. Y.

SELF-RESPECT *by* EXPLOSION

SOAP BUBBLES are small dynamos—chock-full of power to promote human welfare.

For one thing they promote self-respect. A bath or shower helps anybody to face the world with confidence. Clean surroundings are definitely tied up with clean living. Cleanliness influences character!

Good habits of cleanliness are most easily established during the impressionable years of childhood. Example and environment help to form life-time habits. That is why it is so important for mothers and teachers to begin early to educate children along these lines.

The Institute has available material which you may find useful. You are cordially invited to write for it.

CLEANLINESS INSTITUTE

Established to promote public welfare by teaching the value of cleanliness

45 EAST 17th ST., NEW YORK

ACTIVE PLAY IS VITAL NEED OF CHILDREN

All the movies and radios and automobiles ever manufactured cannot supply the need for active play in the lives of children, writes Mrs. Aida De Acosta Breckinridge in the *American Child Health News.*

Play is a major source of physical vitality in childhood and youth alike. Through it heart, lungs, blood vessels, kidneys and nervous structures are developed and strengthened. When children run and jump in outdoor play they do far more than "work off surplus energy." They create energy not only for the day, but for their mature life.

May Day—Child Health Day, sponsored by the American Child Health Association, is a challenge to those responsible for the welfare of children to provide for every child the opportunity for real play in the right place, the right kind and the right amount, Mrs. Breckinridge observes.

TRAINING A CHILD TO BE SELF-RELIANT

Begin training the baby for responsibility as soon as he is able to handle objects, advises Garry Cleveland Myers of Western Reserve University in *Child Welfare.*

Let him feed himself as soon as possible even if some cereal and carrots get into his ears. Let him wash his face and hands alone; have a basin within reach and a low mirror so that he can see when his face is clean.

A baby 2 or 3 years old likes to help dress himself and he should have the opportunity even if it takes considerable time. As soon as he can walk have a low place for his cap and coat which he can reach. Also have a low shelf and basket for his books and toys.

Let the child choose his clothes as far as possible. In short let him have opportunities to make his own judgments, to learn responsibility, is Dr. Myers' plea.

All human activity is evoked by three motive causes; feeling, reason, and suggestion, the last-named being the same thing that doctors call hypnotism.—*Tolstoi.*

Exercise may whet the appetite, relieve the fatigue and tone up the system of the man without organic disease; but it has never done the same for the consumptive when and so long as he has symptoms.—*A. K. Krause.*

A man too busy to take care of his health is like a mechanic too busy to take care of his tools.

—*Cicero.*

LISTS AIMS OF PHYSICAL EDUCATION PROGRAMS

Objectives of a physical education program for schools are outlined as follows by Dr. F. W. Maroney, writing in the *American Physical Education Review:*

1. To inculcate health habits.
2. To develop the body harmoniously through systematic exercise.
3. To secure correction of physical defects.
4. To give a fund of exercise material for use in after-school days.
5. To give opportunities for the development and guidance of the play spirit.
6. To provide situations that will arouse and increase the qualities of courage, fair play, self-sacrifice and loyalty.
7. To give positive instruction in citizenship through leadership and response to commands.

LOS ANGELES MAKES BEST SCORE IN HEALTH WORK

Los Angeles received the highest efficiency score in its health work of any leading city in the United States in a survey made by the American Public Health Association, the bulletin of the health department reports.

The score for the health activities of Los Angeles County health department is eighty-two points, or two points higher than that made by any one of the twenty-six leading cities surveyed. A score of 100 per cent was made in the department's preschool work, which reaches 46,000 children.

A remarkable reduction in the infant mortality among Mexicans received special commendation from the investigators. During the past ten years the rate has dropped from 284.97 to 96.92 per 100,000.

DEVELOP CHARLES RIVER FOR WATER SPORTS

Boston is to have its beauty spot, the Charles River Basin, developed into a great water playground through a gift of $1,000,000 made by Mrs. J. J. Storrow, the *Playground* records.

It was through the efforts of Mrs. Storrow and her late husband that the tidal mud flats of the Charles were reclaimed and made into the beautiful water area that now stretches from Boston all the way to Watertown. It was originally hoped that the basin would be intensively used for recreation. Certain defects that have prevented this use will now be remedied, and bathing, boating and skating will be enjoyed on the Charles as the citizens of London enjoy the Thames and those of Hamburg enjoy the Alster basin.

Guard *their* Health

THOSE little growing bodies and active minds—what a large part *health* plays in their development. Safeguard it by selecting the right foods and seeing that they are *properly cooked.*

Mineral salts are vital for the blood, teeth, bones, and muscle—and the vitamins for height, weight, and growth. There is one sure way of preserving these valuable nutrients in the food your family eats—

The Waterless Cooker
KITCHEN CRAFT
(COMPRESSION TYPE)

Perfect cooking—*without water*—has been made possible by Kitchen Craft's floating valve and "hand-fitted" *air-tight* cover. The cover retains the steam from the natural juices in the foods. The valve—exactly right in weight and automatic in action—maintains the steam at the scientifically correct cooking pressure.

There's no chance of food scorching or drying in a Kitchen Craft. Its base is of heavy aluminum—locked on. Between base and cooker bottom is a layer of asbestos insulation that diffuses the heat uniformly. Your whole meal cooks at one time *without watching.*

KITCHEN CRAFT

NOT SOLD IN STORES

Kitchen Craft products are sold only direct to the home by trained Craftsmen. This lapel button identifies them.

For complete details, just mail the coupon

The Kitchen Craft Co., Health Hill, West Bend, Wis.
Division of West Bend Aluminum Co.

THE KITCHEN CRAFT CO.,
Health Hill, West Bend, Wisconsin

I am interested in The Waterless Cooker, compression type. Without obligating me—you may send literature and prices.

Name .....

Address .....

.....

"HELPS FOR HEALTH TEACHING"

1. In addition to the variety of health teaching material published by the American Medical Association and listed on this page, a special booklet, HELPS FOR HEALTH TEACHING, has just been prepared and shows 100 ways that teachers have used HYGEIA in health instruction. A project in which prospective teachers at the Montana State Normal College correlated health with the other school subjects through the use of HYGEIA is one of the features. Booklet given free to teachers.

2. HYGEIA, The Health Magazine, contains a wealth of material for health teaching, not only in its health articles but in its special departments. Subscription, $3.00 a year.

HEALTH EDUCATION

3. This 164-page book is the health program for public schools as approved and arranged by the joint health committee of the National Education Association and the American Medical Association. It embraces courses of study for the grades, high schools, and for normal schools. "Mental Hygiene," "Accident Prevention," "Dental Hygiene," "Nutrition and Health," are only a few of the subjects which it expertly covers. Single copy, $1.50. Given free with a year's subscription to HYGEIA.

Health Plays

4. **The Good Health Elves.**—17 to 25 characters. 15c a copy. Set of 17 for $2.00.
5. **The Trial of Jimmy Germ.**—8 characters. 10c a copy. 8 for 35c.
6. **The Friendly Brushes.**—11 characters. 10c a copy. 11 for 50c.
7. **The Magic Fluid** (Diphtheria Antitoxin).—8 characters, with chorus. 10c a copy. 8 for 35c.
8. **From Danger Valley to Safety Hill.**—32 to 45 characters. 25c.

Sex Education

9. For Girls: **Margaret, the Doctor's Daughter.**—A physician tells his daughter about the origin of life in fish, birds, mammals. Girls from 12 to 14.
10. **Life's Problems.** For girls from 15 to 18.
11. For Boys: **John's Vacation.**—A discussion between a doctor father and his 12-year-old son. Boys from 10 to 15.
12. **Chums.**—A doctor's frank talks to his 15-year-old son. For boys from 16 to 18.

Written by Dr. Winfield S. Hall. Single copies, 25c; any four, 75c.

Mental Hygiene

13. **Mental Hygiene in Home and School.** 5c
14. **Broken Minds of Youth.** The causes and management of mental qualities in the young. 10c.

—:—

15. **Simplicity in Health Teaching.** 10c.
16. **Underwear and Health.** Proper clothing discussed. 5c.
17. **Booklet of Health Posters,** Miniature reproductions of posters submitted by high school pupils. Instructions on planning and using health posters. 25c.

Physical Training

18. **Rules of the Game,** by Jesse Feiring Williams. Outdoor air, wholesome food, etc. 10c a copy.
19. **Proper Development of the Body as the Basis of Health.** 10c a copy.
20. **Ten Commandments of Good Posture.** 5c a copy.

Nutrition and Diet

21. **The Food We Eat.** Discussion of calories, vitamins, etc. 10c
22. **A Square Meal.** Balanced diet and growth. 5c.

Conservation of Vision

23. **School Children's Eyes.** 11 pages.
24. **Eyes and Vision.** 23 pages.
25. **Ocular Hygiene in Schools.** 11 pages.
26. **Testing the Sight of Young Children.**

10c a copy. 50 copies or more, 6c each.

Communicable Diseases

27. **Diphtheria,** by Dr. George H. Weaver. 15c.
28. **Smallpox,** by Dr. Jay F. Schamberg. 15c.
29. **Typhoid Fever,** by Prof. Edwin O. Jordan. 10c.
30. **Scarlet Fever—Measles, Neighborly Diseases,** by Dr. Ludvig Hektoen and Dr. Ethel Perry. 10c.
31. **Whooping Cough,** by Dr. Ludvig Hektoen and Beatrice Lovett. 10c.

Dental Hygiene

32. **Common Sense in Mouth Hygiene.** 15c.

—:—

33. **Training the Child to Obey.** 15c.
34. **Heroes of Medicine.** 12 reprints in sepia. 8½" x 11½". Ready for framing. 50c a set.
35. **Health Posters from Far and Near.**—Reprints in color of foreign health posters on child welfare and prenatal care. Miniatures. 25c.

Health Problems in Education

36. **Minimum Health Requirements for Rural Schools.** 10c.
37. **Exhibit Charts,** 60 charts on health problems in education. 22" x 28". Single chart, 50c.
38. **Health Charts,** booklet of reduced reproductions of 58 exhibit charts. 25c.
39. **Health Improvement in Rural Schools.** 25c.
40. **Health Service in City Schools.** 25c.
41. **Daylight in the Schoolroom.** 5c.
42. **Conserving the Sight of School Children.** 35c.
43. **Ventilation of School Buildings.** 15c.
44. **The Deafened School Child.** 25c.

HEALTHYLAND

45. The Health Book for Children. An attractively bound volume of children's material that has appeared in HYGEIA. 156 pages, 8½ x 11¾. 60 pages of illustrated stories and poems with subtle health morals; 5 illustrated plays; 30 full page drawings; 12 pages of health funnies; 11 drawings for coloring; health songs with music. $1.50 a copy.

Order by Number.

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago

Enclosed is $..... for health teaching material corresponding to numbers below.

.....

.....

.....

Name.....

Address.....